

Water Division IV

District 15

**Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum**

Blacks Fork Canal, Blacks Fork River

Diversion Description: Diversion consists of a six 4' x 6' slide gates mounted on a concrete structure. A large wood plank diversion dam exists.¹

Diversion Location:

Source: Black's Fork River, Trib. Green River

Section, Township, Range: 14, 14, 116

Conveyance Description: Open Channel Canal, approximately 32 miles in length.¹

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|-------------------------|-----------|------------|--------------------------|----------|
| 04-20-1891 | 30 | Irrigation | 6,442.09 | 91.22 | 91.18 | |
| 03-25-1892 | 245 | Irrigation | 457.00 | 6.06 | 97.24 | |
| 03-23-1903 | 1045E | Irrigation | 80.00 | 1.13 | 98.37 | |
| 04-06-1903 | 1017E | Irrigation | 87.00 | 1.24 | 99.61 | |
| 04-17-1903 | 1029E | Irrigation | 1,090.00 | 15.53 | 115.14 | |
| 05-15-1903 | 1046E | Domestic, Irrigation | 1,032.00 | 14.72 | 129.86 | |
| 06-04-1903 | 1075E | Irrigation | 160.00 | 2.28 | 132.14 | |
| 08-11-1903 | 1138E | Domestic, Irrigation | 10,777.20 | 154.86 | 287.00 | |

Storage Rights:

Estimated Canal Losses: Greater than typical (20%) losses are experienced.¹

Irrigation Practices: Approximately 400 acres are irrigated by 3 sprinkler lines; remaining lands are flood irrigated.¹

Crop Types / Consumptive Use: Approximately 160 acres are alfalfa hay; remaining lands are native grass hay and pasture.¹

Return Flows: Approximately 70% of the return flows are delivered to Urie Draw, south of Lyman, Wyoming, 25% to the Fort Bridger Canal, and 5% to Black's Fork west of Ft. Bridger, Wyoming.

Other Operational Information: Ditch is generally turned on in May and off in July.¹

Sources: 1) John Yarbrough, State Engineer's Office, Interview, May 4, 2000.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Blacks Fork Canal, Blacks Fork River, Diversion Data

| Water year | May | | June | | July | | August | | September | |
|------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|
| | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) |
| 1971 | | | | | | | <i>14.50</i> | <i>5,104.00</i> | <i>14.50</i> | <i>3,880.00</i> |
| 1981 | | | | | | | | | | |
| 1982 | | | | | | | | | | |
| 1983 | | | | | | | | | | |
| 1984 | | | | | | | | | | |
| 1985 | 175.32 | 10,780.00 | 222.51 | 13,240.00 | 170.44 | 10,480.00 | 83.01 | 5,104.00 | 65.21 | 3,880.00 |
| 1986 | 102.62 | 6,310.11 | 311.64 | 18,543.70 | 189.49 | 11,651.11 | 93.06 | 5,722.20 | 77.82 | 4,630.50 |
| 1987 | 171.47 | 10,543.00 | 215.34 | 12,813.40 | 163.16 | 10,032.50 | 85.38 | 5,249.70 | 65.82 | 3,916.40 |
| 1988 | | | | | | | | | | |
| 1989 | | | | | | | | | | |
| 1990 | 142.24 | 8,746.10 | 243.54 | 14,491.50 | 145.74 | 8,961.50 | 37.48 | 2,304.80 | 35.97 | 2,140.20 |
| 1991 | | | | | | | | | | |
| 1992 | 180.39 | 11,092.00 | 182.89 | 10,883.00 | 130.74 | 8,039.00 | 48.90 | 3,007.00 | 28.40 | 1,690.00 |
| 1993 | 122.46 | 7,530.00 | 250.80 | 14,923.90 | 165.07 | 10,149.60 | 76.71 | 4,716.80 | 76.24 | 4,536.30 |
| 1994 | 149.41 | 7,530.00 | 190.92 | 14,923.90 | 96.23 | 10,149.60 | 17.91 | 4,716.80 | 22.61 | 4,536.30 |
| 1995 | 71.32 | 4,385.50 | 270.97 | 16,123.90 | 217.81 | 13,392.60 | 96.58 | 5,938.60 | 80.70 | 4,802.10 |
| 1996 | 159.19 | 9,788.21 | 285.40 | 16,982.48 | 162.74 | 10,006.49 | 76.78 | 4,721.02 | 84.91 | 5,052.50 |
| 1997 | 154.42 | 9,495.00 | 247.28 | 14,714.00 | 156.57 | 9,627.00 | 91.01 | 5,596.00 | 76.87 | 4,574.00 |
| 1998 | | | | | | | | | | |

| | | | | | | | | | | |
|-----------|--------|----------|--------|-----------|--------|-----------|-------|----------|-------|----------|
| Averages: | 142.89 | 8,619.99 | 242.13 | 14,763.98 | 159.80 | 10,248.94 | 65.58 | 4,743.72 | 57.19 | 3,967.12 |
|-----------|--------|----------|--------|-----------|--------|-----------|-------|----------|-------|----------|

Data in italics from USGS gaging station 006216.00, see attached data sheets.

Blank cells are due to missing/insufficient data.

Average = Average Flow for ENTIRE month. Monthly Total = Total Volume used during month.

See Methodology section for explanations.

Spot data readings used in calculating averages in table on following pages.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Blacks Fork Canal, Blacks Fork River, Diversion Data

Data:

1985: May, 10780 AF; June, 13240 AF; July, 10480 AF; August, 5104 AF; September, 3880 AF. (Totals computed by Hydrographer.)

1986: May, 6310.11 AF; June, 18543.7 AF; July, 11651.11 AF; August, 5722.20 AF; September, 4630.5 AF. (Totals computed by Hydrographer.)

1987: May, 10543.0 AF; June, 12813.4 AF; July, 10032.5 AF; August, 5249.7 AF; September, 3916.4 AF. (Totals computed by Hydrographer.)

1990: May, 8756.1 AF; June, 14491.5 AF; July, 8961.5 AF; August, 2304.8 AF; September, 2140.2 AF. (Totals computed by Hydrographer.)

1991: May, 5693 AF; June, 12397 AF; July, 8886 AF; August, 4366 AF; September, 3761 AF. (Totals computed by Hydrographer.)

1992: May, 11092 AF; June, 10883 AF; July, 8039 AF; August, 3007 AF; September, 1690 AF. (Totals computed by Hydrographer.)

1993: May, 7530.0 AF; June, 14923.9 AF; July, 10149.6 AF; August, 4716.8 AF; September, 4536.3 AF. (Totals computed by Hydrographer.)

1994: 4/25, 32.0 cfs (arrive), 24.0 cfs (depart); 4/28, 10.0 cfs; 4/29, 11.0 cfs; 5/13, 19.1 cfs (arrive), 10.1 cfs (depart); 5/14, 22.0 cfs (arrive), 20.0 cfs (depart); 5/16, 215.0 cfs; 5/17, 212.0 cfs; 5/18, 202.0 cfs; 5/20, 245.0 cfs; 5/25, 283.0 cfs; 6/1, 290.0 cfs; 6/3, 276.0 cfs; 6/7, 273.0 cfs; 6/10, 120.0 cfs; 6/14, 99.0 cfs; 6/17, 165.0 cfs; 6/21, 185.0 cfs; 6/28, 212.0 cfs; 7/1, 155.0 cfs; 7/5, 155.0 cfs; 7/6, 150.0 cfs; 7/9, 155.0 cfs; 7/12, 126.0 cfs; 7/13, 139.0 cfs (arrive), 128.0 cfs (depart); 7/19, 78.5 cfs; 7/22, 55.0 cfs; 7/24, 59.0 cfs; 7/26, 33.0 cfs; 7/28, 31.0 cfs; 7/30, 30.0 cfs; 8/2, 12.5 cfs; 8/9, 11.0 cfs; 8/13, 1.5 cfs; 8/16, 8.0 cfs; 8/18, 8.0 cfs; 8/23, 37.0 cfs; 8/25, 42.0 cfs; 8/30, 23.6 cfs; 9/3, 22.8 cfs; 9/5, 22.8 cfs; 9/6, 19.7 cfs; 9/11, 13.5 cfs; 9/20, 42.0 cfs; 9/21, 34.8 cfs; 9/23, 38.8 cfs; 9/27, 21.5 cfs.

1995: May, 4385.5 AF; June, 16123.9 AF; July, 13392.6 AF; August, 5938.6 AF; September, 4802.1 AF. (Totals computed by Hydrographer.)

1996: See attached data sheet.

1997: May, 9495 AF; June, 14714 AF; July, 9627 AF; August, 5596 AF; September, 4574 AF. (Totals computed by Hydrographer.)

Supply: 1980, average; 1981, slightly below average; 1982, average; 1983, above average; 1984, above average; 1985, average; 1986, average; 1987, average; 1988, below average; 1989, below average; 1990, below average; 1991, slightly below average; 1992, below average; 1993, average; 1994, below average; 1995, slightly above average; 1996, average; 1997, average; 1998, slightly above average.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Blacks Fork Canal, Blacks Fork River, Diversion Data

| | 1996 | | | | |
|--------------------|---------|----------|----------|---------|---------|
| | May | June | July | Aug. | Sept. |
| 1 | 22.0 | 236.0 | 253.0 | 85.0 | 80.5 |
| 2 | 23.0 | 236.0 | 231.0 | 85.0 | 81.1 |
| 3 | 23.0 | 233.0 | 218.0 | 85.0 | 81.7 |
| 4 | 24.0 | 247.0 | 220.0 | 84.0 | 82.3 |
| 5 | 24.0 | 270.0 | 220.0 | 82.0 | 82.9 |
| 6 | 29.0 | 270.0 | 218.0 | 77.0 | 83.5 |
| 7 | 40.0 | 302.0 | 218.0 | 77.0 | 84.1 |
| 8 | 43.0 | 408.0 | 222.0 | 79.0 | 84.7 |
| 9 | 65.0 | 404.0 | 215.0 | 77.0 | 85.3 |
| 10 | 108.0 | 365.0 | 200.0 | 76.0 | 85.8 |
| 11 | 110.0 | 299.0 | 198.0 | 74.0 | 86.4 |
| 12 | 108.0 | 283.0 | 182.0 | 74.0 | 87.0 |
| 13 | 110.0 | 266.0 | 160.0 | 74.0 | 87.6 |
| 14 | 146.0 | 289.0 | 162.0 | 72.0 | 88.2 |
| 15 | 159.7 | 296.0 | 162.0 | 72.0 | 88.8 |
| 16 | 173.4 | 270.0 | 162.0 | 71.0 | 89.4 |
| 17 | 187.1 | 283.0 | 148.0 | 71.6 | 90.0 |
| 18 | 200.9 | 286.0 | 141.0 | 72.2 | 90.0 |
| 19 | 214.6 | 273.0 | 139.0 | 72.8 | 90.0 |
| 20 | 228.3 | 276.0 | 135.0 | 73.4 | 92.0 |
| 21 | 242.0 | 302.0 | 132.0 | 74.0 | 92.0 |
| 22 | 263.0 | 309.0 | 130.0 | 74.6 | 92.0 |
| 23 | 289.0 | 296.0 | 121.0 | 75.2 | 92.0 |
| 24 | 283.0 | 276.0 | 117.0 | 75.8 | 88.0 |
| 25 | 273.0 | 260.0 | 113.0 | 76.3 | 87.0 |
| 26 | 273.0 | 245.0 | 110.0 | 76.9 | 77.0 |
| 27 | 263.0 | 270.0 | 108.0 | 77.5 | 79.0 |
| 28 | 266.0 | 276.0 | 108.0 | 78.1 | 77.0 |
| 29 | 250.0 | 273.0 | 113.0 | 78.7 | 71.0 |
| 30 | 247.0 | 263.0 | 101.0 | 79.3 | 71.0 |
| 31 | 247.0 | | 88.0 | 79.9 | |
| CFS days | 4935.00 | 8562.00 | 5045.00 | 2380.25 | 2547.25 |
| Average (cfs) | 159.19 | 285.40 | 162.74 | 76.78 | 84.91 |
| Monthly Total (AF) | 9788.43 | 16982.48 | 10006.61 | 4721.16 | 5052.40 |

Note: Data in italics are linearly interpolated to fill in missing data in record. Data missing due to equipment failures.

Source: State Engineer's Office, Annual Hydrographers' Reports.

Green River Basin, Wyoming; Key Structures and Diversions Description and Operation Memorandum

Blacks Fork Canal, Blacks Fork River, Diversion Data

BLACKS FORK CANAL.

STATION NO. 006216.00

LATITUDE 0-00-00 LONGITUDE 0-00-00

SECTION 0 TOWNSHIP 0 RANGE 0 P.M.

ELEVATION UNKNOWN DRAINAGE AREA UNKNOWN

NONCONTRIBUTING AREA UNKNOWN BASIN UNKNOWN

UNKNOWN

DATA FROM WATER COMMISSIONERS

(P)

| MEAN DAILY FLOW IN CFS BY WATER YEAR | | | | | | | | | | | | | |
|--------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|---------|--------|-----|
| 1971 | | | | | | | | | | | | | |
| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEPT | DAY |
| 1 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 1 |
| 2 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 2 |
| 3 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 3 |
| 4 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 4 |
| 5 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 5 |
| 6 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 6 |
| 7 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 7 |
| 8 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 8 |
| 9 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 9 |
| 10 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 10 |
| 11 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 11 |
| 12 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 12 |
| 13 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 13 |
| 14 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14 |
| 15 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 15 |
| 16 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 16 |
| 17 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14.50 | 17 |
| 18 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14.50 | 18 |
| 19 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14.50 | 19 |
| 20 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14.50 | 20 |
| 21 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14.50 | 21 |
| 22 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14.50 | 22 |
| 23 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14.50 | 23 |
| 24 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14.50 | 24 |
| 25 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14.50 | 25 |
| 26 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14.50 | 26 |
| 27 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14.50 | 27 |
| 28 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14.50 | 28 |
| 29 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14.50 | 29 |
| 30 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14.50 | 30 |
| 31 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50 | 14.50 | 31 |
| TOTAL | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 217.50* | 435.00 | |
| MEAN | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 14.50* | 14.50 | |
| AC-FT | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 431.40* | 862.81 | |

** INDICATES
MISSING DATA

* INDICATES
COMPUTED FROM
INCOMPLETE DATA

E INDICATES
ESTIMATED VALUE

Source: Wyoming Water Resources Data System, March 20, 2000.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Bridger Butte Ditch, Blacks Fork River

Diversion Description: Diversion consists of two 4' by 4' slide gates mounted on a concrete structure.¹

Diversion Location:

Source: Black's Fork River, Trib. Green River

Section: Township, Range: 30, 15, 115

Conveyance Description: Open Channel Canal, approximately 8 miles in length.¹

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|-----------------------------------|----------|------------|--------------------------|----------|
| 12-22-1898 | 2064 | Domestic, Irrigation | 1,488.03 | 23.42 | 23.42 | |
| 05-09-1901 | 666E | Irrigation | 505.00 | 7.19 | 30.61 | |
| 03-18-1904 | 1173E | Industrial | | 11.00 | 41.61 | |
| 06-19-1907 | 1741E | Power Development | | 9.00 | 50.61 | |
| 05-21-1909 | 2064E | Domestic, Irrigation | 603.65 | 8.60 | 59.21 | |
| 12-11-1919 | 4112E | Domestic, Irrigation, Stock | 160.00 | 2.28 | 61.49 | |

Storage Rights: None.

Estimated Canal Losses: Typical (10%).¹

Irrigation Practices: Lands are flood irrigated.¹

Crop Types / Consumptive Use: Water is used to irrigate approximately 300 acres of alfalfa hay; remaining lands are native grass hay and pasture.¹

Return Flows: Return flows are delivered to Three Mile Creek above Black's Fork.

Other Operational Information: Ditch is generally turned on in May and off in July.¹

Sources: 1) John Yarbrough, State Engineer's Office, Interview, May 4, 2000.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Bridger Butte Ditch, Blacks Fork River, Diversion Data

| Water year | May | | June | | July | | August | | September | |
|------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|
| | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) |
| 1980 | | | | | | | | | | |
| 1981 | | | | | | | | | | |
| 1982 | | | | | | | | | | |
| 1983 | | | | | | | | | | |
| 1984 | | | | | | | | | | |
| 1985 | 41.52 | 2,552.97 | 57.36 | 3,413.16 | 17.97 | 1,104.93 | 4.40 | 270.55 | | |
| 1986 | | | 45.68 | 2,718.15 | 24.95 | 1,534.12 | 1.27 | 78.09 | 20.98 | 1,248.40 |
| 1987 | 44.07 | 2,709.76 | 45.31 | 2,696.13 | 8.63 | 530.64 | 7.85 | 482.68 | 8.67 | 515.90 |
| 1988 | | | | | | | | | | |
| 1989 | | | | | | | | | | |
| 1990 | 15.43 | 948.75 | 48.35 | 2,877.02 | 13.05 | 802.41 | 2.52 | 154.95 | 5.01 | 298.12 |
| 1991 | | | | | 23.26 | 1,430.20 | 3.13 | 192.46 | 9.05 | 538.51 |
| 1992 | 30.77 | 1,891.97 | 29.72 | 1,768.46 | 9.12 | 560.77 | 2.92 | 179.54 | 1.49 | 88.66 |
| 1993 | 27.24 | 1,674.92 | 53.93 | 3,209.06 | 32.91 | 2,023.56 | | | | |
| 1994 | 22.75 | 1,398.84 | 35.33 | 2,102.28 | 5.55 | 341.26 | 0.74 | 45.50 | 2.25 | 133.88 |
| 1995 | 16.19 | 995.48 | 73.03 | 4,345.59 | 45.13 | 2,774.94 | 21.50 | 1,321.98 | 11.20 | 666.45 |
| 1996 | 33.73 | 2,073.98 | 43.00 | 2,558.68 | 28.89 | 1,776.38 | 5.81 | 357.24 | 7.96 | 473.65 |
| 1997 | 30.48 | 1,874.14 | 59.74 | 3,554.78 | 22.58 | 1,388.39 | 7.89 | 485.14 | 11.18 | 665.26 |
| 1998 | | | 55.27 | 3,288.79 | 56.15 | 3,452.53 | 0.00 | 0.00 | 0.59 | 35.11 |

| | | | | | | | | | | |
|-----------|-------|----------|-------|----------|-------|----------|------|--------|------|--------|
| Averages: | 29.13 | 1,791.20 | 49.70 | 2,957.46 | 24.02 | 1,476.68 | 5.28 | 324.38 | 7.84 | 466.39 |
|-----------|-------|----------|-------|----------|-------|----------|------|--------|------|--------|

Blank cells are due to missing/insufficient data.

Average = Average Flow for ENTIRE month. Monthly Total = Total Volume used during month.

See Methodology section for explanations.

Spot data readings used in calculating averages in table on following pages.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Bridger Butte Ditch, Blacks Fork River, Diversion Data

Data:

1985: 6/9, 42.6 cfs; 5/25, 59.4 cfs; 5/27, 80.2 cfs; 6/2, 46.9 cfs; 6/9, 80.2 cfs; 6/12, 80.2 cfs; 6/22, 47.4 cfs; 6/25, 44.2 cfs; 7/2, 22.8 cfs; 7/10, 24.9 cfs; 7/17, 19.6 cfs; 7/24, 11.7 cfs; 7/30, 8.6 cfs; 8/7, 3.0 cfs; 8/13, 5.0 cfs; 8/22, 4.1 cfs; 8/29, 4.1 cfs; 9/4, 4.1 cfs; 9/11, off.

1986: 5/20, 60 cfs (est); 5/24, 60 cfs (est); 7/7, 32.6 cfs; 7/16, 28.0 cfs; 7/23, 28.0 cfs; 7/30, 8/6, 8/13, 8/20, 8/27, off; 9/3, 2.5 cfs (est); 9/10, 27.6 cfs; 9/17, 46.9 cfs; 9/24, 27.1 cfs.

1987: 5/11, 83.0 cfs (est); 6/4, 42.0 cfs; 6/9, 70.0 cfs (est); 6/16, 43.0 cfs; 6/19, 43.0 cfs (est); 6/20, 30.0 cfs; 6/24, 35.0 cfs (est); 6/30, 38.0 cfs; 7/7, 6.0 cfs; 7/14, 14.0 cfs; 7/22, 2.0 cfs (est); 7/29, off; 8/5, 13.0 cfs; 8/12, 14.0 cfs; 8/19, 8.0 cfs; 8/26, off; 9/16, 8.0 cfs; 9/23, 22.0 cfs (est); 9/29, 4.0 cfs (est).

1990: 5/12, 1.0 cfs; 5/22, 30.6 cfs; 5/25, 36.0 cfs; 5/26, 30.6 cfs; 5/30, 30.6 cfs; 6/6, 43.0 cfs; 6/7, 47.5 cfs; 6/10, 69.0 cfs; 6/13, 71.0 cfs; 6/20, 37.5 cfs; 6/27, 45.0 cfs; 6/30, 36.6 cfs; 7/4, 38.6 cfs; 7/11, 11.5 cfs; 7/18, 8.0 cfs; 7/25, off; 8/1, 5.5 cfs; 8/8, 2.0 cfs (est); 8/15, off; 9/5, 6.5 cfs; 9/12, 3.0 cfs; 9/17, 2.5 cfs (est); 9/26, 8.0 cfs; 10/1, 5.0 cfs (est).

1991: 6/26, 31 cfs; 7/3, 18 cfs; 7/10, 37 cfs; 7/17, 41.5 cfs (est); 7/24, 6 cfs; 7/31, 6 cfs; 8/2, 6 cfs; 8/7, 3 cfs; 8/14, 3 cfs; 8/21, 4 cfs; 8/28, 0 cfs; 9/4, 8 cfs; 9/11, 2.5 cfs (est); 9/18, 6 cfs; 9/25, 19.5 cfs; 9/27, 19.5 cfs; 9/28, 19.5 cfs; 10/1, 6 cfs (est); 10/3, 5 cfs (est).

1992: 5/6, 3.00 cfs; 5/9, 30.00 cfs; 5/15, 35.00 cfs; 5/19, 36.00 cfs; 5/21, 41.50 cfs; 5/24, 41.50 cfs; 5/26, 49.00 cfs; 6/2, 41.60 cfs; 6/10, 41.00 cfs; 6/17, 22.00 cfs; 6/18, 27.00 cfs; 6/19, 18.00 cfs; 6/24, 24.50 cfs; 7/1, 17.00 cfs; 7/6, 17.00 cfs; 7/8, 12.00 cfs; 7/15, 9.00 cfs; 7/18, 7.00 cfs; 7/22, 5.00 cfs; 7/24, 5.00 cfs; 8/26, 2.00 cfs (est); 9/2, 2.00 cfs (est); 9/3, 2.00 cfs (est); 9/9, 0.50 cfs (est); 9/13, 5.00 cfs; 9/17, 0.50 cfs (est); 9/22, 4.00 cfs.

1993: 5/17, 30.00 cfs; 5/18, 32.60 cfs; 5/19, 40.00 cfs; 5/29, 70.00 cfs; 6/2, 85.00 cfs; 6/6, 42.00 cfs; 6/16, 43.00 cfs; 6/23, 59.50 cfs; 6/25, 57.00 cfs; 7/2, 72.00 cfs; 7/5, 54.00 cfs; 7/9, 30.60 cfs; 7/14, 27.00 cfs; 7/15, 30.50 cfs; 7/16, 35.00 cfs; 7/21, 16.00 cfs; 7/23, 31.60 cfs; 7/24, 35.00 cfs; 7/28, 23.00 cfs; 8/3, 0.00 cfs; 8/4, 4.50 cfs.

1994: 5/15, 4.0 cfs; 5/17, 39.0 cfs; 5/18, 42.5 cfs; 5/20, 45.3 cfs; 5/26, 40.5 cfs; 6/2, 53.5 cfs; 6/4, 43.0 cfs; 6/8, 42.6 cfs; 6/11, 42.6 cfs; 6/15, 40.5 cfs; 6/18, 28.0 cfs; 6/21, 43.0 cfs; 6/23, 43.0 cfs; 6/24, 24.0 cfs; 6/29, 13.0 cfs; 7/2, 19.5 cfs; 7/6, 7.8 cfs; 7/13, 6.5 cfs; 7/14, 6.5 cfs (arrive), 4.9 cfs (depart); 7/27, 1.0 cfs; 8/11, 0.0 cfs; 8/13, 0.5 cfs; 8/17, 0.5 cfs; 8/24, 1.0 cfs; 9/3, 2.2 cfs; 9/4, 2.2 cfs; 9/5, 2.2 cfs; 9/7, 12.0 cfs; 9/10, 0.5 cfs; 9/14, 0.0 cfs; 9/16, 0.0 cfs; 9/21, 6.2 cfs; 9/28, 4.0 cfs.

1995: 5/2, 5.0 cfs; 5/15, 5.0 cfs; 5/17, 5.0 cfs; 5/19, 7.0 cfs; 5/23, 23.0 cfs; 5/24, 33.0 cfs; 5/25, 39.0 cfs; 5/26, 43.0 cfs; 5/30, 41.0 cfs; 6/2, 41.0 cfs; 6/5, 58.0 cfs; 6/6, 70.0 cfs; 6/13, 70.0 cfs; 6/24, 85.0 cfs; 6/30, 85.0 cfs; 7/7, 85.0 cfs; 7/15, 37.5 cfs; 7/22, 21.6 cfs; 7/26, 20.0 cfs; 7/31, 17.0 cfs; 8/2, 15.0 cfs; 8/9, 12.4 cfs; 8/16, 73.0 cfs; 8/19, 6.5 cfs; 8/19, 14.0 cfs; 8/23, 15.0 cfs; 8/30, 5.0 cfs; 9/6, 1.0 cfs (est); 9/13, 2.0 cfs (est); 9/20, 30.0 cfs; 9/27, 15.0 cfs; 10/3, 3.0 cfs; 10/30, 1.0 cfs.

1996: 5/9, 5.0 cfs (est); 5/10, 5.0 cfs (est); 5/11, 30 cfs; 5/12, 42.0 cfs (est); 5/13, 52.0 cfs; 7/3, 38.5 cfs; 7/13, 33.5 cfs; 7/17, 35 cfs; 7/19, 29.8 cfs (arrive), 20 cfs (depart); 7/23, 15.6 cfs; 7/24, 18.0 cfs (arrive), 24.0 cfs (depart); 7/29, 27.0 cfs; 7/30, 23.7 cfs (arrive), 8.0 cfs (depart); 8/7, 5.7 cfs (arrive), 4.0 cfs (depart); 8/14, 2.0 cfs (est); 8/21, 2.0 cfs (est)(arrive), 1.5 cfs (est)(depart); 8/28, 13.5 cfs; 9/2, 13 cfs (arrive), 15 cfs (depart); 9/4, 10.1 cfs; 9/5, 8.8 cfs; 9/18, 6.98 cfs; 9/25, 17 cfs.

1997: 5/16, 30.0 cfs; 5/26, 73.0 cfs; 6/26, 59.0 cfs (arrive), 41.0 cfs (depart); 6/29, 30.6 cfs; 7/2, 42.0 cfs; 7/9, 32.5 cfs (arrive), 20.0 cfs (depart); 7/11, 20.0 cfs; 7/16, 22.8 cfs; 7/23, 23.2 cfs (arrive), 9.2 cfs (depart); 7/27, 13.4 cfs (arrive), 8.9 cfs (depart); 7/30, 8.4 cfs (arrive), 9.0 cfs (depart); 7/30, 8.4 cfs (arrive), 9.0 cfs (depart); 8/5, 15.0 cfs; 8/13, 10.1 cfs; 8/21, 7.8 cfs (arrive), 2.0 cfs (est) (depart); 8/30, 2.0 cfs (est) (arrive), 1.0 cfs (est) (depart); 9/3, 2.0 cfs (est); 9/10, 26.0 cfs; 9/14, 25.0 cfs; 9/17, 23.7 cfs (arrive), 11.4 cfs (depart); 9/24, 2.0 cfs (est); 9/30, 2.0 cfs (est).

1998: 6/8, 99 cfs; 6/25, 53 cfs; 7/7, 85 cfs; 7/15, 85 cfs; 7/22, 43 cfs; 7/29, 8/5, 8/12, 8/19, 8/26, 9/2, 9/9, 9/16, 9/23, 0 cfs; 9/30, 4 cfs; 10/6, 0 cfs.

Supply: 1980, average; 1981, slightly below average; 1982, average; 1983, above average; 1984, above average; 1985, average; 1986, average; 1987, average; 1988, below average; 1989, below average; 1990, below average; 1991, slightly below average; 1992, below average; 1993, average; 1994, below average; 1995, slightly above average; 1996, average; 1997, average; 1998, slightly above average.

Source: State Engineer's Office, Annual Hydrographers' Reports.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Bridger Butte Ditch, Blacks Fork River, Diversion Data

**Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum**

C.L. Byrne Number 2 Ditch, Big Muddy Creek

Diversion Description: Information not available at time of report.

Diversion Location:

Source: Big (or West) Muddy Creek, Trib. Black's Fork River, Trib. Green River
Section, Township, Range: 4, 14, 117

Conveyance Description: Open Channel Canal.

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|----------------------|----------|---------------|--------------------------|-------------------------------------|
| 09-23-1896 | 1321 | Irrigation | 53.00 | 0.75 | 0.75 | |
| 08-17-1912 | 2659E | Irrigation, Stock | 2,301.50 | 32.87 | 33.62 | Permitted Name: Byrne's No. 2 Ditch |

Storage Rights: None.

Estimated Canal Losses: Information not available at time of report.

Irrigation Practices: Information not available at time of report.

Crop Types / Consumptive Use: Information not available at time of report.

Return Flows: Return flows are delivered to Big Muddy Creek above Musselman Ditch.

Other Operational Information: Information not available at time of report.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

C.L. Byrne Number 2 Ditch, Big Muddy Creek, Diversion Data

No Diversion Data Available.

**Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum**

Center Ditch, Blacks Fork River

Diversion Description: Diversion consists of two 2' x 4' slide gates mounted on a concrete structure.¹

Diversion Location:

Source: Black's Fork River, Trib. Green River

Section, Township, Range: 16, 15, 115

Conveyance Description: Open Channel Canal, approximately 5 miles in length.¹

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|-------------------------|--------|------------|--------------------------|----------|
| 12-14-1908 | 8855 | Domestic, Irrigation | 476.30 | 6.81 | 6.81 | |
| 05-08-1915 | 3187E | Irrigation | 105.00 | 1.50 | 8.31 | |
| 02-10-1928 | 4572E | Irrigation | 11.50 | 0.16 | 8.47 | |

Storage Rights: None.

Estimated Canal Losses: No significant losses are experienced through the canal. In fact, significant gains are made from the Fort Bridger Canal.¹

Irrigation Practices: Lands are flood irrigated.¹

Crop Types / Consumptive Use: Water is used to irrigate native grass hay and pasture.¹

Return Flows: Return flows are delivered to Twin Butte Canal near Fort Bridger, Wyoming.

Other Operational Information: Ditch is generally turned on in May and off in July.¹

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| Sources: 1) John Yarbrough, State Engineer's Office, Interview, May 4, 2000. |
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Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Center Ditch, Blacks Fork River, Diversion Data

| Wateryear | May | | June | | July | | August | | September | |
|-----------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|
| | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) |
| 1980 | | | | | | | | | | |
| 1981 | | | | | | | | | | |
| 1982 | | | | | | | | | | |
| 1983 | | | | | | | | | | |
| 1984 | | | | | | | | | | |
| 1985 | 6.70 | 411.97 | 9.29 | 552.79 | 3.64 | 223.81 | 6.67 | 410.12 | | |
| 1986 | | | 10.00 | 595.04 | 3.39 | 208.44 | 4.10 | 252.10 | 4.55 | 270.74 |
| 1987 | | | 5.85 | 348.10 | 6.00 | 368.93 | 4.40 | 270.55 | 6.25 | 371.90 |
| 1988 | | | | | | | | | | |
| 1989 | | | | | | | | | | |
| 1990 | 2.72 | 167.25 | 7.64 | 454.61 | 4.44 | 273.00 | 4.10 | 252.10 | | |
| 1991 | | | | | 5.97 | 367.08 | 5.68 | 349.25 | | |
| 1992 | 3.20 | 196.76 | 6.70 | 398.68 | 6.74 | 414.43 | 10.45 | 642.55 | | |
| 1993 | 2.64 | 162.33 | 8.06 | 479.60 | 5.02 | 308.67 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1994 | | | 7.21 | 429.02 | 4.39 | 269.93 | 0.35 | 21.52 | 0.47 | 27.97 |
| 1995 | 0.36 | 22.14 | 15.94 | 948.50 | 5.65 | 347.40 | 1.40 | 86.08 | 3.28 | 195.17 |
| 1996 | 3.86 | 237.34 | 5.68 | 337.98 | 3.29 | 202.29 | 1.69 | 103.91 | 3.58 | 213.02 |
| 1997 | | | 3.29 | 195.77 | 3.50 | 215.21 | 0.00 | 0.00 | 3.97 | 236.23 |
| 1998 | | | 5.37 | 319.54 | 3.77 | 231.81 | 0.17 | 10.45 | 3.27 | 194.58 |

| | | | | | | | | | | |
|-----------|------|--------|------|--------|------|--------|------|--------|------|--------|
| Averages: | 3.25 | 199.63 | 7.73 | 459.97 | 4.65 | 285.92 | 3.25 | 199.89 | 3.17 | 188.70 |
|-----------|------|--------|------|--------|------|--------|------|--------|------|--------|

Blank cells are due to missing/insufficient data.

Average = Average Flow for ENTIRE month. Monthly Total = Total Volume used during month.

See Methodology section for explanations.

Spot data readings used in calculating averages in table on following pages.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Center Ditch, Blacks Fork River, Diversion Data

Data:

1985: 5/11, 10.0 cfs; 5/27, 10.0 cfs; 6/4, 8.5 cfs; 6/22, 8.0 cfs; 6/24, 11.9 cfs; 7/2, 11.9 cfs; 7/10, 4.0 cfs; 7/17, off; 8/22, 7.5 cfs; 8/29, 10.8 cfs; 9/4, 9.1 cfs.
1986: 5/20, 10 cfs (est); 7/7, 10 cfs (est); 7/16, 7/23, 7/30, 8/6, off; 8/13, 5.0 cfs; 8/20, 7.1 cfs; 8/27, 5.0 cfs; 9/3, 5.0 cfs; 9/10, 11.1 cfs; 9/17, 2.1 cfs; 9/24, 2.1 cfs; 9/30, 1 cfs (est).
1987: 6/4, 7.4 cfs; 6/16, 8.5 cfs; 6/20, off; 6/24, 3.0 cfs; 6/30, 12.0 cfs; 7/7, 12.5 cfs; 7/14, 6.0 cfs; 7/22, 3.0 cfs; 7/29, off; 9/9, 10.0 cfs; 9/16, 10.0 cfs; 9/24, off; 9/29, off.
1990: 5/17, 3.0 cfs; 5/23, 11.0 cfs; 5/26, 3.0 cfs; 5/30, 4.0 cfs; 6/6, 1.5 cfs; 6/7, 10.0 cfs; 6/13, 9.2 cfs; 6/20, 7.3 cfs; 6/27, 11.9 cfs; 6/29, 5.0 cfs; 7/4, 10.0 cfs; 7/11, 9.0 cfs; 7/18, off; 8/29, 6.0 cfs; 9/5, 1.5 cfs; 9/12, off.
1991: 6/26, 5 cfs; 6/27, 6.5 cfs; 7/3, 10.5 cfs; 7/10, 10.5 cfs; 7/17, 7.5 cfs; 7/24, 0 cfs; 9/25, 5 cfs; 10/1, 2 cfs (est).
1992: 5/6, 0.00 cfs; 5/9, 0.00 cfs; 5/19, 3.50 cfs; 5/21, 8.50 cfs; 5/24, 8.50 cfs; 5/26, 6.90 cfs; 6/2, 2.00 cfs; 6/10, 8.00 cfs; 6/17, 8.50 cfs; 6/19, 8.50 cfs; 6/24, 7.50 cfs; 7/1, 5.00 cfs; 7/8, 8.00 cfs; 7/15, 0.50 cfs (est); 7/17, 0.50 cfs (est); 7/29, 14.50 cfs; 8/26, 8.50 cfs; 9/2, 6.00 cfs.
1993: 5/17, 2.00 cfs; 6/1, 8.90 cfs; 6/9, 8.80 cfs; 6/16, 7.00 cfs; 6/25, 7.70 cfs; 7/2, 9.00 cfs (est); 7/5, 9.00 cfs (est); 7/9, 8.50 cfs; 7/14, 9.50 cfs; 7/15, 10.00 cfs; 7/21, 7/28, 8/4, 8/11, 0.00 cfs; 9/15, 9.00 cfs; 9/22, 7.00 cfs; 10/1, 2.00 cfs.
1994: 5/24, 8.0 cfs; 5/26, 7.5 cfs; 6/4, 0.0 cfs; 6/8, 8.5 cfs; 6/9, 8.5 cfs; 6/11, 8.5 cfs; 6/13, 8.5 cfs; 6/15, 8.5 cfs; 6/18, 8.5 cfs; 6/21, 8.5 cfs; 6/29, 8.5 cfs; 7/2, 8.5 cfs; 7/6, 6.0 cfs; 7/14, 4.5 cfs; 8/13, 8/24, 8/31, 9/7, 0.0 cfs; 9/14, 0.3 cfs; 9/16, 0.3 cfs; 9/21, 1.5 cfs; 9/28, 0.8 cfs.
1995: 5/17, 1.0 cfs; 5/19, 1.0 cfs; 5/23, 0.5 cfs; 5/30, 0.5 cfs; 6/2, 3.0 cfs; 6/4, 9.0 cfs; 6/6, 6.0 cfs; 6/13, 7.0 cfs; 6/13, 44.0 cfs; 6/24, 13.0 cfs; 6/30, 13.8 cfs; 7/7, 13.5 cfs; 7/14, 3.4 cfs; 7/22, 3.0 cfs; 7/26, 0.5 cfs; 8/2, 8/9, 8/16, 8/19, 0.0 cfs; 8/23, 3.6 cfs; 8/30, 4.0 cfs; 9/6, 3.4 cfs; 9/13, 2.0 cfs; 9/16, 5.0 cfs; 9/20, 2.4 cfs; 9/27, 4.3 cfs; 10/3, 1.0 cfs.
1996: 5/9, 5.0 cfs (est); 7/3, 5.99 cfs (arrive), 4.51 cfs (depart); 7/13, 4.6 cfs (arrive), 5.5 cfs (depart); 7/19, 4.5 cfs (arrive), 3.0 cfs (depart); 7/24, 2.8 cfs (arrive), 0 cfs (depart); 8/7, 0 cfs; 8/21, 0 cfs (arrive), 4.5 cfs (depart); 8/28, 3.9 cfs (arrive), 6.25 cfs (depart); 9/4, 4.6 cfs (arrive), 5.7 cfs (depart); 9/5, 7.2 cfs; 9/18, 3.2 cfs; 9/25, 2.1 cfs (arrive), 3.0 cfs (depart).
1997: 5/26, 7.0 cfs; 6/26, 1.0 cfs (est); 6/27, 8.5 cfs; 6/26, 0.0 cfs; 7/2, 0.0 cfs (arrive), 6.75 cfs (depart); 7/9, 4.5 cfs; 7/11, 4.5 cfs; 7/16, 3.9 cfs (arrive), 2.7 cfs (depart); 7/23, 1.8 cfs (arrive); 2.7 cfs (depart); 7/24, 5.0 cfs (est); 7/27, 2.8 cfs; 7/30, 2.4 cfs (arrive), 0.0 cfs (depart); 8/5, 8/8, 8/13, 8/21, 0.0 cfs; 9/3, 0.0 cfs (arrive), 4.5 cfs (depart); 9/10, 5.5 cfs (arrive), 6.0 cfs (depart); 9/17, 5.0 cfs (est); 9/30, 2.0 cfs (est).
1998: 6/8, 7 cfs; 7/7, 7 cfs; 7/14, 3.2 cfs; 7/22, 0 cfs; 7/29, 4.5 cfs; 8/5, 8/12, 8/19, 8/26, 0 cfs; 9/2, 0 cfs (arrive), 2.7 cfs (depart); 9/9, 2.9 cfs (arrive), 4.5 cfs (depart); 9/16, 4 cfs; 9/23, 2.5 cfs; 9/30, 3.4 cfs (arrive), 5.7 cfs (depart); 10/6, 2.4 cfs (arrive), 1.2 cfs (depart).
Supply: 1980, average; 1981, slightly below average; 1982, average; 1983, above average; 1984, above average; 1985, average; 1986, average; 1987, average; 1988, below average; 1989, below average; 1990, below average; 1991, slightly below average; 1992, below average; 1993, average; 1994, below average; 1995, slightly above average; 1996, average; 1997, average; 1998, slightly above average.

Source: State Engineer's Office, Annual Hydrographers' Reports.

**Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum**

Deeben-Heinze Ditch, Blacks Fork River

Diversion Description: Diversion consists of two 4' x 4' slide gates. A concrete and plank diversion dam exists.¹

Diversion Location:

Source: Black's Fork River, Trib. Green River

Section, Township, Range: 28, 16, 11S

Conveyance Description: Open Channel Canal, approximately 20 miles in length.¹

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|-----------------------------------|----------|------------|--------------------------|---|
| 11-26-1904 | 6294 | Domestic, Irrigation, Stock | 291.00 | 4.15 | 4.15 | |
| 05-14-1909 | 2360E | Domestic, Irrigation | 640.00 | 9.12 | 13.27 | |
| 06-20-1910 | 2361E | Domestic, Irrigation | 1,114.00 | 15.89 | 29.16 | |
| 05-25-1915 | 3246E | Irrigation | 116.00 | 1.66 | 30.82 | |
| 03-29-1921 | 4216E | Domestic, Irrigation | 274.98 | 3.93 | 34.75 | |
| 03-07-1947 | 5435E | Irrigation | 282.00 | 4.02 | 38.77 | |
| 04-02-1947 | 5440E | Irrigation | | | 38.77 | 794.53 AF Secondary Supply from Wall Development Company Reservoir (5612R) (2550.80 acres served) |

Storage Rights: Wall Development Company Reservoir (5612R).

Estimated Canal Losses: Greater than typical (20%).¹

Irrigation Practices: Approximately 640 acres are irrigated by 4 sprinkler lines; remaining lands are flood irrigated.¹

Crop Types / Consumptive Use: Water is used to irrigate approximately 120 acres of alfalfa hay; remaining lands are native grass hay and pasture.¹

Return Flows: Approximately 60% of the return flows are delivered to Black's Fork River just below Rollins Draw, and approximately 40% of the return flows are delivered to Black's Fork River above Rollins Draw (north of Urie, Wyoming).

Other Operational Information: This ditch is commonly also known as the Wall Ditch. Ditch is generally turned on in May and off in July.¹

Sources: 1) John Yarbrough, State Engineer's Office, Interview, May 4, 2000.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Deeben-Heinze Ditch, Blacks Fork River

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Deeben-Heinze Ditch, Blacks Fork River, Diversion Data

| Water year | May | | June | | July | | August | | September | |
|------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|
| | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) |
| 1980 | | | | | | | | | | |
| 1981 | | | | | | | | | | |
| 1982 | | | | | | | | | | |
| 1983 | | | | | | | | | | |
| 1984 | | | | | | | | | | |
| 1985 | | | 20.81 | 1,238.28 | 6.64 | 408.28 | 11.60 | 713.26 | 5.69 | 338.58 |
| 1986 | | | 33.13 | 1,971.37 | 18.57 | 1,141.82 | 2.42 | 148.80 | 7.45 | 443.31 |
| 1987 | 26.82 | 1,649.10 | 25.54 | 1,519.74 | 25.48 | 1,566.70 | 10.95 | 673.29 | 3.23 | 192.20 |
| 1988 | | | | | | | | | | |
| 1989 | | | | | | | | | | |
| 1990 | | | 38.47 | 2,289.12 | 11.96 | 735.39 | 5.15 | 316.66 | 2.40 | 142.81 |
| 1991 | | | | | 11.81 | 726.17 | 8.15 | 501.12 | 4.34 | 258.25 |
| 1992 | | | | | | | | | | |
| 1993 | 12.83 | 788.89 | 38.30 | 2,279.01 | 27.39 | 1,684.15 | 19.56 | 1,202.70 | 7.17 | 426.64 |
| 1994 | 17.65 | 1,085.26 | 18.14 | 1,079.40 | 6.37 | 391.68 | 3.45 | 212.13 | 2.76 | 164.23 |
| 1995 | 12.40 | 762.45 | 45.18 | 2,688.40 | 44.03 | 2,707.30 | 21.87 | 1,344.73 | 12.05 | 717.02 |
| 1996 | 30.49 | 1,874.76 | 31.82 | 1,893.42 | 18.86 | 1,159.66 | 11.02 | 677.59 | 6.50 | 386.78 |
| 1997 | 21.85 | 1,343.50 | 37.41 | 2,226.05 | 15.55 | 956.13 | 13.91 | 855.29 | 9.22 | 548.63 |
| 1998 | | | 36.15 | 2,151.07 | 55.42 | 3,407.64 | 27.52 | 1,692.14 | 15.18 | 903.27 |

| | | | | | | | | | | |
|-----------|-------|----------|-------|----------|-------|----------|-------|--------|------|--------|
| Averages: | 20.34 | 1,250.66 | 32.50 | 1,933.59 | 22.01 | 1,353.17 | 12.33 | 757.97 | 6.91 | 411.07 |
|-----------|-------|----------|-------|----------|-------|----------|-------|--------|------|--------|

Blank cells are due to missing/insufficient data.

Average = Average Flow for ENTIRE month. Monthly Total = Total Volume used during month.

See Methodology section for explanations.

Spot data readings used in calculating averages in table on following pages.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Deeben-Heinze Ditch, Blacks Fork River, Diversion Data

Data:

1985 (all est): 5/25, 30 cfs; 5/27, 40 cfs; 5/29, 70 cfs; 6/2, 13 cfs; 6/7, 15 cfs; 6/18, 40 cfs; 6/19, 28 cfs; 7/2, 3 cfs; 7/10, 3 cfs; 7/17, 5 cfs; 7/24, 14 cfs; 7/30, 8 cfs; 8/7, 14 cfs; 8/13, 9 cfs; 8/22, 12 cfs; 8/29, 13 cfs; 9/4, 12 cfs; 9/8, 15 cfs; 9/11, 8 cfs; 9/18, 5 cfs.

1986 (all est): 5/20, 50 cfs; 7/7, 20 cfs; 7/16, 10 cfs; 7/23, 20 cfs; 7/30, 10 cfs; 8/6, 8 cfs; 8/13, 8/20, 8/27, off; 9/10, 4 cfs; 9/17, 15 cfs; 9/24, 10 cfs; 9/30, 5 cfs.

1987 (all est): 5/9, 25.0 cfs; 5/11, 60.0 cfs; 5/24, 24.0 cfs; 6/16, 30.0 cfs; 6/17, 40.0 cfs; 6/18, 45.0 cfs; 6/20, 13.0 cfs; 6/24, 12.0 cfs; 6/30, 31.0 cfs; 7/7, 30.0 cfs; 7/14, 26.0 cfs; 7/22, 25.0 cfs; 7/29, 20.0 cfs; 8/5, 4.0 cfs; 8/12, 18.0 cfs; 8/19, 12.0 cfs; 8/26, 8.0 cfs; 9/2, 10.0 cfs; 9/9, off; 9/23, 4.0 cfs; 9/29, 4.0 cfs.

1990 (all est except one gaged): 5/25, 5.0 cfs; 5/30, 0 cfs; 6/6, 20.0 cfs (gaged); 6/7, 70.0 cfs; 6/9, 73.0 cfs; 6/13, 70.0 cfs; 6/15, 60.0 cfs; 6/20, 30.0 cfs; 6/25, 29.0 cfs; 6/27, 19.0 cfs; 7/3, 11.0 cfs; 7/4, 23.0 cfs; 7/11, 11.0 cfs; 7/18, 13.0 cfs; 7/25, 8.0 cfs; 8/1, 7.0 cfs; 8/8, 6.0 cfs; 8/9, 5.0 cfs; 8/12, 8.0 cfs; 8/13, 6.0 cfs; 8/15, 5.5 cfs; 8/22, 4.0 cfs; 8/29, 4.0 cfs; 9/5, 0 cfs; 9/18, 3.0 cfs; 9/26, 4.0 cfs; 10/1, 4.0 cfs.

1991 (all est): 6/21, 40 cfs; 6/23, 40 cfs; 6/26, 1 cfs; 6/28, 1 cfs; 7/3, 9 cfs; 7/10, 14 cfs; 7/17, 16.5 cfs; 7/24, 8 cfs; 7/31, 12 cfs; 8/2, 12 cfs; 8/7, 8 cfs; 8/14, 7 cfs; 8/21, 5 cfs; 8/28, 11.5 cfs; 9/2, 9 cfs; 9/4, 10.5 cfs; 9/11, 5 cfs; 9/18, 8.5 cfs; 9/25, 18 cfs; 10/1, 7 cfs; 10/3, 66 cfs.

1993 (all est): 5/17, 20.00 cfs; 6/9, 40.00 cfs; 6/16, 34.00 cfs; 6/22, 50.00 cfs; 6/23, 45.00 cfs; 6/25, 34.00 cfs; 7/2, 40.00 cfs; 7/5, 45.00 cfs; 7/6, 34.00 cfs; 7/14, 5.00 cfs; 6/25, 34.00 cfs; 7/2, 40.00 cfs; 7/5, 45.00 cfs; 7/6, 34.00 cfs; 7/14, 5.00 cfs; 7/15, 20.00 cfs; 7/16, 20.00 cfs; 7/22, 19.50 cfs; 7/23, 35.00 cfs; 7/26, 50.00 cfs; 7/28, 25.00 cfs; 8/4, 30.00 cfs; 8/7, 30.00 cfs; 8/11, 28.00 cfs; 8/18, 20.00 cfs; 8/23, 12.00 cfs; 8/25, 8.00 cfs; 9/1, 5.00 cfs; 9/8, 5.00 cfs; 9/15, 11.00 cfs; 9/22, 5.00 cfs; 9/26, 9.00 cfs; 10/1, 7.00 cfs.

1994: 4/16, 3.0 cfs; 4/28, 3.0 cfs; 4/29, 4.0 cfs; 5/2, 7.0 cfs; 5/17, 10.0 cfs; 5/18, 30.0 cfs; 5/19, 34.0 cfs; 5/20, 54.0 cfs; 5/26, 16.0 cfs; 5/28, 22.0 cfs; 5/29, 22.0 cfs; 5/30, 14.0 cfs; 6/4, 17.0 cfs; 6/5, 20.0 cfs; 6/6, 10.0 cfs; 6/7, 12.0 cfs; 6/8, 25.0 cfs; 6/9, 34.0 cfs; 6/11, 34.0 cfs; 6/13, 25.0 cfs; 6/15, 18.0 cfs; 6/18, 12.0 cfs; 6/21, 28.0 cfs; 6/23, 20.0 cfs; 6/24, 14.0 cfs; 6/25, 9.0 cfs; 8/13, 3.0 cfs; 8/14, 4.0 cfs; 8/15, 4.0 cfs; 8/17, 3.0 cfs; 8/18, 3.0 cfs; 8/19, 1.5 cfs; 8/20, 2.5 cfs; 8/22, 2.0 cfs; 8/24, 2.0 cfs; 8/25, 3.5 cfs; 8/26, 4.5 cfs; 8/27, 6.0 cfs; 8/29, 5.0 cfs; 8/31, 2.0 cfs; 9/2, 1.5 cfs; 9/4, 3.5 cfs; 9/7, 3.0 cfs; 9/10, 3.0 cfs; 9/14, 3.0 cfs; 9/16, 2.0 cfs; 9/21, 4.0 cfs; 9/25, 3.5 cfs; 9/28, 3.5 cfs.

1995: 5/15, 4.0 cfs; 5/17, 5.0 cfs; 5/19, 4.0 cfs; 5/23, 55.0 cfs; 5/25, 55.0 cfs; 5/26, 25.0 cfs; 5/27, 20.0 cfs (arrive), 18.0 cfs (depart); 5/30, 14.0 cfs; 6/2, 14.0 cfs; 6/4, 50.0 cfs (est); 6/5, 40.0 cfs (est); 6/6, 40.0 cfs (est); 6/10, 50.0 cfs (est); 6/12, 40.0 cfs (est); 6/13, 35.0 cfs (est); 6/15, 50.0 cfs (est); 6/24, 50.0 cfs (est); 6/30, 50.0 cfs (est); 7/1, 50.0 cfs (est); 7/4, 50.0 cfs (est); 7/7, 50.0 cfs (est); 7/14, 50.0 cfs (est); 7/22, 40.0 cfs (est); 7/26, 40.0 cfs (est); 7/29, 30.0 cfs (est); 7/31, 30.0 cfs (est); 8/2, 30.0 cfs (est); 8/3, 30.0 cfs (est); 8/9, 15.0 cfs (est); 8/16, 25.0 cfs (est); 8/19, 25.0 cfs (est); 8/23, 25.0 cfs (est); 8/26, 20.0 cfs (est); 8/30, 15.0 cfs (est); 8/31, 15.0 cfs (est); 9/6, 20.0 cfs (est); 9/13, 12.0 cfs (est); 9/21, 7.0 cfs (est); 9/27, 7.0 cfs (est); 9/29, 12.0 cfs (est); 10/3, 10.0 cfs (est); 10/30, 12.0 cfs (est).

1996: 5/9, 20.0 cfs (est); 5/10, 35.0 cfs (est); 5/20, 45.0 cfs (est); 5/21, 45.0 cfs (est); 5/23, 45.0 cfs; 7/13, 17 cfs; 7/17, 28 cfs (est), 20 cfs (est); 7/19, 15 cfs; 7/24, 5.0 cfs (est) (arrive), 7/24, 23.0 cfs (est) (depart); 7/26, 17.0 cfs (est); 7/29, 30.0 cfs (est); 7/30, 5.0 cfs (est) (arrive); 7/30, 18.0 cfs (est); 8/1, 20.0 cfs (est); 8/5, 20.0 cfs (est); 8/6, 20.0 cfs (est); 8/7, 14.0 cfs (est); 8/8, 14.0 cfs (est); 8/14, 8.0 cfs (est); 8/15, 6.0 cfs (est); 8/16, 5.0 cfs (est); 8/17, 5.0 cfs (est); 8/19, 7.0 cfs (est); 8/21, 10.0 cfs (est); 8/22, 3.0 cfs (est); 8/23, 3.0 cfs (est); 8/24, 15.0 cfs (est); 8/26, 13.0 cfs (est); 8/28, 8.0 cfs (est); 8/29, 6.0 cfs (est); 8/31, 9.0 cfs (est); 9/2, 7.0 cfs (est) (arrive), 6.0 cfs (depart); 9/4, 14.0 cfs (est); 9/5, 14.0 cfs (est); 9/18, 3.0 cfs (est); 9/22, 4.0 cfs (est); 9/23, 5.0 cfs (est); 9/25, 3.0 cfs (est); 9/26, 5.0 cfs (est); 9/27, 6.0 cfs (est); 9/28, 7.0 cfs (est).

1997 (all est): 5/13, 4.0 cfs; 5/14, 7.0 cfs; 5/15, 25.0 cfs; 5/16, 40.0 cfs; 5/17, 35.0 cfs; 5/19, 32.0 cfs; 5/20, 32.0 cfs; 5/22, 30.0 cfs; 5/23, 35.0 cfs; 5/24, 40.0 cfs; 5/25, 45.0 cfs; 5/26, 45.0 cfs; 5/27, 45.0 cfs; 5/28, 45.0 cfs; 5/29, 45.0 cfs; 5/30, 45.0 cfs; 5/31, 45.0 cfs; 6/1, 40.0 cfs; 6/5, 40.0 cfs; 6/7, 45.0 cfs; 6/9, 45.0 cfs; 6/10, 45.0 cfs; 6/11, 45.0 cfs; 6/17, 40.0 cfs; 6/18, 40.0 cfs; 6/19, 45.0 cfs; 6/20, 45.0 cfs; 6/21, 45.0 cfs; 6/23, 45.0 cfs; 6/24, 45.0 cfs; 6/26, 20.0 cfs; 6/29, 11.0 cfs; 7/2, 13.0 cfs; 7/5, 10.0 cfs; 7/9, 9.5 cfs; 7/11, 10.0 cfs; 7/16, 26.0 cfs; 7/17, 20.0 cfs; 7/18, 22.0 cfs; 7/19, 22.0 cfs; 7/21, 22.0 cfs; 7/23, 15.0 cfs; 7/24, 22.0 cfs; 7/25, 20.0 cfs; 7/27, 10.0 cfs; 7/30, 15.0 cfs; 8/3, 20.0 cfs; 8/4, 23.0 cfs; 8/5, 30.0 cfs; 8/8, 13.0 cfs; 8/9, 18.0 cfs; 8/11, 20.0 cfs; 8/13, 8.5 cfs; 8/14, 9.0 cfs; 8/21, 8.0 cfs; 8/22, 15.0 cfs; 8/29, 10.0 cfs; 8/30, 8.0 cfs (arrive), 12.0 cfs (depart); 9/3, 10.0 cfs; 9/7, 9.0 cfs; 9/10, 7.0 cfs; 9/13, 8.0 cfs; 9/14, 18.0 cfs; 9/17, 8.0 cfs; 9/24, 10.0 cfs; 9/25, 10.0 cfs; 9/26, 10.0 cfs; 9/30, 8.0 cfs.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Deeben-Heinze Ditch, Blacks Fork River, Diversion Data

1998 (all est): 6/8, 40 cfs; 6/11, 40 cfs; 6/25, 50 cfs; 7/8, 70-80 cfs; 7/14, 70-80 cfs; 7/15, 70-80 cfs; 7/17, 50 cfs; 7/22, 35 cfs; 7/24, 35 cfs; 7/29, 40 cfs; 7/30, 40 cfs; 8/1, 40 cfs; 8/5, 35 cfs; 8/7, 35 cfs; 8/12, 25 cfs; 8/14, 18 cfs; 8/19, 30 cfs; 8/26, 25 cfs; 8/29, 25 cfs; 9/2, 5 cfs (arrive), 20 cfs (depart); 9/5, 18 cfs; 9/7, 20 cfs; 9/9, 15 cfs; 9/16, 10 cfs; 9/17, 15 cfs; 9/23, 12 cfs; 9/25, 25 cfs; 9/30, 15 cfs; 10/6, 15.0 cfs.

Supply: 1980, average; 1981, slightly below average; 1982, average; 1983, above average; 1984, above average; 1985, average; 1986, average; 1987, average; 1988, below average; 1989, below average; 1990, below average; 1991, slightly below average; 1992, below average; 1993, average; 1994, below average; 1995, slightly above average; 1996, average; 1997, average; 1998, slightly above average.

Source: State Engineer's Office, Annual Hydrographers' Reports.

**Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum**

Demandeur Ditch, Blacks Fork River

Diversion Description: Diversion consists of a single 36" diameter Waterman slide gate.¹

Diversion Location:

Source: Black's Fork River, Trib. Green River

Section, Township, Range: 32, 14, 116

Conveyance Description: Open Channel Canal, approximately 4 miles in length.¹

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|-------------------------|--------|------------|--------------------------|----------|
| 03-03-1914 | 12284 | Domestic, Irrigation | 148.00 | 2.11 | 2.11 | |

Storage Rights: None.

Estimated Canal Losses: Slightly greater than typical (10-15%).¹

Irrigation Practices: Lands are flood irrigated.¹

Crop Types / Consumptive Use: Water is used to irrigate native grass hay and pasture.¹

Return Flows: Return flows are delivered to Willow Creek near Robertson, Wyoming.

Other Operational Information: Ditch is generally turned on in May and off in July.¹

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| Sources: 1) John Yarbrough, State Engineer's Office, Interview, May 4, 2000. |
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**Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum**

Demandor Ditch, Blacks Fork River, Diversion Data

| Wateryear | May | | June | | July | | August | | September | |
|-----------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|
| | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) |
| 1980 | | | | | | | | | | |
| 1981 | | | | | | | | | | |
| 1982 | | | | | | | | | | |
| 1983 | | | | | | | | | | |
| 1984 | | | | | | | | | | |
| 1985 | | | 5.02 | 298.71 | 4.37 | 268.70 | 3.09 | 190.00 | | |
| 1986 | | | 2.65 | 157.69 | 3.30 | 202.91 | 0.08 | 4.92 | 0.00 | 0.00 |
| 1987 | 3.12 | 191.84 | 5.17 | 307.64 | 3.77 | 231.81 | 0.29 | 17.83 | 0.70 | 41.65 |
| 1988 | | | | | | | | | | |
| 1989 | | | | | | | | | | |
| 1990 | 1.91 | 117.44 | 5.11 | 304.07 | 2.96 | 182.00 | | | | |
| 1991 | | | | | 4.49 | 276.08 | 1.65 | 101.45 | 4.15 | 246.94 |
| 1992 | | | | | | | | | | |
| 1993 | | | | | | | | | | |
| 1994 | 2.65 | 162.94 | 4.22 | 251.11 | 2.79 | 171.55 | 0.47 | 28.90 | 0.09 | 5.36 |
| 1995 | 2.52 | 154.95 | 7.08 | 421.29 | 6.14 | 377.53 | 0.27 | 16.60 | 0.00 | 0.00 |
| 1996 | | | | | 3.91 | 240.42 | 0.73 | 44.89 | 2.29 | 136.26 |
| 1997 | | | | | 4.79 | 294.53 | 0.00 | 0.00 | 0.36 | 21.42 |
| 1998 | | | 7.07 | 420.69 | 5.29 | 325.27 | 1.53 | 94.08 | 0.47 | 27.97 |

| | | | | | | | | | | |
|-----------|------|--------|------|--------|------|--------|------|-------|------|-------|
| Averages: | 2.55 | 156.79 | 5.19 | 308.74 | 4.18 | 257.08 | 0.90 | 55.41 | 1.01 | 59.95 |
|-----------|------|--------|------|--------|------|--------|------|-------|------|-------|

Blank cells are due to missing/insufficient data.

Average = Average Flow for ENTIRE month. Monthly Total = Total Volume used during month.

See Methodology section for explanations.

Spot data readings used in calculating averages in table on following pages.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Demander Ditch, Blacks Fork River, Diversion Data

Data:

1985: 5/25, 4.0 cfs; 6/14, 5.7 cfs; 6/21, 5.7 cfs; 6/24, 5.7 cfs; 7/1, 1.9 cfs; 7/9, 1.9 cfs; 7/16, 6.0 cfs; 7/23, 6.0 cfs; 7/29, 6.0 cfs; 8/6, off; 8/12, 4.0 cfs; 8/21, 3.6 cfs; 8/28, 3.6 cfs; 9/3, 4.0 cfs; 9/10, off.
1986: 5/20, 4 cfs (est); 7/7, 1.6 cfs; 7/15, 2.2 cfs; 7/22, 8.0 cfs; 7/29, 2.2 cfs; 8/5, 8/12, 8/19, 8/26, 9/2, 9/9, 9/16, 9/23, 9/30, off.
1987: 5/9, 3.0 cfs (est); 6/16, 7.0 cfs; 6/20, 2.0 cfs; 6/23, 2.2 cfs; 6/29, 6.2 cfs; 7/6, 6.2 cfs; 7/13, 3.0 cfs; 7/21, 3.0 cfs; 7/28, 3.0 cfs; 8/4, off; 9/29, 1.0 cfs.
1990: 5/14, 2.2 cfs; 5/24, 4.6 cfs; 5/26, 2.2 cfs; 6/6, 5.4 cfs; 6/12, 6.0 cfs; 6/19, 4.6 cfs; 6/26, 5.0 cfs; 6/29, 5.0 cfs; 7/3, 5.0 cfs; 7/10, 7.0 cfs; 7/17, 2.2 cfs; 7/24, off; 10/1, 1.0 cfs (est).
1991: 6/25, 2.2 cfs; 6/27, 2.2 cfs; 7/2, 2.2 cfs; 7/9, 2.2 cfs; 7/16, 8.2 cfs; 7/23, 8.0 cfs; 7/30, 0 cfs; 8/6, 1.5 cfs; 8/13, 0 cfs; 9/4, 5.0 cfs; 9/17, 5.0 cfs; 9/24, 5.0 cfs; 10/1, 2.0 cfs.
1994: 5/14, 5.0 cfs (arrive), 1.0 cfs (depart); 5/16, 7.6 cfs; 5/17, 5.6 cfs; 5/25, 2.2 cfs; 6/1, 8.0 cfs; 6/3, 3.8 cfs; 6/7, 8.0 cfs; 6/10, 8.0 cfs; 6/14, 2.4 cfs; 6/17, 2.3 cfs; 6/21, 6.3 cfs; 6/28, 0.0 cfs; 7/1, 0.0 cfs; 7/5, 5.4 cfs; 7/12, 1.8 cfs; 7/13, 3.6 cfs; 8/9, 0.5 cfs; 8/13, 0.3 cfs; 8/16, 0.3 cfs; 8/23, 0.5 cfs; 8/30, 9/6, 9/10, 9/16, 0.0 cfs; 9/20, 0.3 cfs; 9/27, 0.3 cfs.
1995: 5/17, 2.2 cfs; 5/19, 2.4 cfs; 5/22, 2.2 cfs; 5/30, 12.7 cfs (arrive), 3.6 cfs (depart); 6/6, 3.0 cfs (est) (arrive), 6.8 cfs (depart); 6/13, 6.8 cfs; 6/24, 9.0 cfs; 6/30, 8.7 cfs; 7/7, 9.3 cfs; 7/15, 8.0 cfs; 7/26, 2.5 cfs; 8/1, 0.5 cfs; 8/8, 0.25 cfs (est); 8/15, 0.25 cfs (est); 8/18, 0.25 cfs (est); 8/22, 0.5 cfs (est); 8/29, 9/5, 10/3, 0.0 cfs.
1996: 7/2, 6.56 cfs (arrive), 5.66 cfs (depart); 7/12, 8.6 cfs (arrive), 8.0 cfs (depart); 7/16, 6.8 cfs (arrive), 2 cfs (depart); 7/30, 0.9 cfs (arrive), 0 cfs (depart); 8/6, 8/13, 8/20, 0 cfs; 8/27, 0 cfs (arrive), 3.6 cfs (depart); 9/3, 5.4 cfs; 9/17, 2.87 cfs (arrive), 0 cfs (depart).
1997: 6/27, 11.3 cfs (arrive), 6.7 cfs (depart); 6/28, 3.2 cfs (arrive), 2.2 cfs (depart); 7/1, 6.7 cfs (arrive), 2.2 cfs (depart); 7/8, 10.0 cfs; 7/15, 8.0 cfs (arrive), 7.6 cfs (depart); 7/22, 4.6 cfs (arrive), 0.0 cfs (depart); 7/29, 8/5, 8/12, 8/19, 8/26, 9/2, 9/9, 0.0 cfs; 9/16, 0.5 cfs; 9/23, 0.5 cfs; 9/30, 0.5 cfs (est).
1998: 6/8, 12 cfs; 7/7, 5 cfs; 7/21, 9.3 cfs (arrive), 3.2 cfs (depart); 7/28, 2.6 cfs; 8/4, 1.6 cfs; 8/11, 1.5 cfs; 8/18, 1.4 cfs; 8/25, 1.5 cfs; 9/1, 1.6 cfs; 9/8, 1.7 cfs (arrive), 0.7 cfs (depart); 9/15, 9/22, 9/29, 0 cfs; 10/6, 0.7 cfs.

Supply: 1980, average; 1981, slightly below average; 1982, average; 1983, above average; 1984, above average; 1985, average; 1986, average; 1987, average; 1988, below average; 1989, below average; 1990, below average; 1991, slightly below average; 1992, below average; 1993, average; 1994, below average; 1995, slightly above average; 1996, average; 1997, average; 1998, slightly above average.

Source: State Engineer's Office, Annual Hydrographers' Reports.

**Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum**

Fort Bridger Canal, Blacks Fork River

Diversion Description: Diversion consists of two 3' x 3' slide gates.¹

Diversion Location:

Source: Black's Fork River, Trib. Green River

Section, Township, Range: 16, 15, 115

Conveyance Description: Open Channel Canal.¹

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|---------------------------------------|--------|------------|--------------------------|---|
| 04-01-1891 | 18 | Irrigation | 979.43 | 13.97 | 13.97 | |
| 04-20-1891 | 30 | Irrigation | 92.48 | 1.32 | 15.29 | POD/MOC change from portion of Black's Fork Canal. |
| 03-23-1894 | 66E | Irrigation | 325.40 | 4.64 | 19.93 | |
| 09-29-1897 | 277E | Domestic, Irrigation, Municipal | 40.00 | 5.00 | 24.93 | |
| 11-24-1897 | 293E | Domestic, Irrigation, Stock | 774.82 | 11.05 | 35.98 | |
| 05-02-1898 | 339E | Irrigation | 272.34 | 3.87 | 39.85 | |
| 03-09-1901 | 635E | Irrigation | 115.00 | 1.64 | 41.49 | |
| 03-27-1901 | 641E | Irrigation | 280.00 | 3.99 | 45.48 | |
| 09-05-1906 | 1786E | Irrigation | 80.00 | 1.14 | 46.62 | |
| 12-14-1908 | 8855 | Domestic, Irrigation | 76.50 | 1.09 | 47.71 | POD/MOC change from portion of Center Ditch. |
| 05-06-1909 | 2063E | Irrigation | 38.00 | 0.54 | 48.25 | |
| 03-23-1921 | 4262E | Irrigation | 20.00 | 0.28 | 48.53 | |

Storage Rights: None.

Estimated Canal Losses: No significant losses are experienced by the canal. In fact, considerable gains are made from the Black's Fork Canal.¹

Irrigation Practices: Approximately 240 acres are irrigated by 2 sprinkler lines; remaining lands are flood irrigated.¹

Crop Types / Consumptive Use: Water is used to irrigate approximately 240 acres of alfalfa hay; remaining lands are native grass hay and pasture.¹

Return Flows: Approximately 80% of the return flows are delivered to the Twin Buttes Canal to Rollins Draw, and 20% of the return flows are delivered to the Urie Draw south of Lyman, Wyoming.

Other Operational Information: Ditch is generally turned on in May and off in July.¹

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Fort Bridger Canal, Blacks Fork River

Sources: 1) John Yarbrough, State Engineer's Office, Interview, May 4, 2000.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Fort Bridger Canal, Blacks Fork River, Diversion Data

| Wateryear | May | | June | | July | | August | | September | |
|-----------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|
| | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) |
| 1980 | | | | | | | | | | |
| 1981 | | | | | | | | | | |
| 1982 | | | | | | | | | | |
| 1983 | | | | | | | | | | |
| 1984 | | | | | | | | | | |
| 1985 | 33.80 | 2,078.28 | 34.43 | 2,048.73 | 24.50 | 1,506.45 | 18.26 | 1,122.76 | 15.90 | 946.12 |
| 1986 | | | 36.81 | 2,190.35 | 31.79 | 1,954.69 | 17.38 | 1,068.65 | 16.13 | 959.80 |
| 1987 | 21.61 | 1,328.75 | 36.80 | 2,189.75 | 22.88 | 1,406.84 | 17.95 | 1,103.70 | 14.01 | 833.65 |
| 1988 | | | | | | | | | | |
| 1989 | | | | | | | | | | |
| 1990 | 20.45 | 1,257.42 | 45.64 | 2,715.77 | 29.01 | 1,783.76 | 15.30 | 940.76 | 14.10 | 839.01 |
| 1991 | | | | | 27.01 | 1,660.78 | 15.46 | 950.60 | 13.24 | 787.83 |
| 1992 | 33.51 | 2,060.45 | 31.19 | 1,855.93 | 16.87 | 1,037.30 | 15.63 | 961.05 | 8.84 | 526.02 |
| 1993 | | | | | | | | | | |
| 1994 | 30.85 | 1,896.89 | 36.30 | 2,160.00 | 18.24 | 1,121.53 | 13.82 | 849.76 | 10.02 | 596.23 |
| 1995 | 16.71 | 1,027.46 | 44.68 | 2,658.64 | 25.93 | 1,594.37 | 21.98 | 1,351.50 | 25.28 | 1,504.26 |
| 1996 | | | | | | | | | | |
| 1997 | 26.01 | 1,599.29 | 45.03 | 2,679.47 | 29.36 | 1,805.28 | 11.93 | 733.55 | 19.53 | 1,162.12 |
| 1998 | | | 30.89 | 1,838.08 | 40.67 | 2,500.70 | 5.82 | 357.86 | 15.83 | 941.95 |

| | | | | | | | | | | |
|-----------|-------|----------|-------|----------|-------|----------|-------|--------|-------|--------|
| Averages: | 26.13 | 1,606.93 | 37.97 | 2,259.64 | 26.63 | 1,637.17 | 15.35 | 944.02 | 15.29 | 909.70 |
|-----------|-------|----------|-------|----------|-------|----------|-------|--------|-------|--------|

Blank cells are due to missing/insufficient data.

Average = Average Flow for ENTIRE month. Monthly Total = Total Volume used during month.

See Methodology section for explanations.

Spot data readings used in calculating averages in table on following pages.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Fort Bridger Canal, Blacks Fork River, Diversion Data

Data:

1985: 5/4, 30.7 cfs; 5/27, 42.1 cfs; 6/4, 42.1 cfs; 6/22, 25.8 cfs; 6/25, 40.0 cfs; 7/2, 23.2 cfs; 7/10, 26.2 cfs; 7/17, 28.0 cfs; 7/24, 23.6 cfs; 7/30, 19.6 cfs; 8/7, 13.0 cfs; 8/13, 20.8 cfs; 8/19, 18.0 cfs; 8/22, 18.8 cfs; 8/29, 21.2 cfs; 9/4, 16.6 cfs; 9/7, 14.0 cfs; 9/11, 18.0 cfs; 9/18, 15.8 cfs; 9/25, 15.8 cfs; 10/9, 8.1 cfs.

1986: 5/20, 30 cfs (est); 7/7, 42.1 cfs; 7/16, 35.5 cfs; 7/23, 35.5 cfs; 7/30, 2.0 cfs; 8/6, 18.0 cfs; 8/13, 18.0 cfs; 8/20, 22.0 cfs; 8/27, 15.8 cfs; 9/3, 15.8 cfs; 9/10, 24.1 cfs; 9/17, 15.8 cfs; 9/24, 15.8 cfs; 9/30, 5 cfs (est).

1987: 5/9, 10.0 cfs (est); 5/11, 30.0 cfs; 6/4, 30.0 cfs; 6/16, 42.0 cfs; 6/20, 40.0 cfs; 6/24, 42.0 cfs; 6/30, 32.0 cfs; 7/7, 30.0 cfs; 7/14, 20.0 cfs; 7/22, 19.0 cfs; 7/28, 19.0 cfs; 8/5, 22.0 cfs; 8/11, 19.0 cfs; 8/19, 16.3 cfs; 8/26, 15.0 cfs; 9/2, 18.0 cfs; 9/9, 19.0 cfs; 9/16, 19.0 cfs; 9/23, 21.0 cfs.

1990: 5/15, 18.0 cfs; 5/22, 40 cfs; 5/25, 41.0 cfs; 5/26, 43.0 cfs; 5/30, 45.4 cfs; 6/6, 45.0 cfs; 6/7, 46.5 cfs; 6/13, 47.0 cfs; 6/20, 45.0 cfs; 6/27, 44.5 cfs; 7/4, 47.9 cfs; 7/11, 41.0 cfs; 7/18, 19.0 cfs; 7/25, 17.3 cfs; 8/1, 14.0 cfs; 8/8, 16.0 cfs; 8/15, 16.0 cfs; 8/22, 14.0 cfs; 8/29, 16.0 cfs; 9/5, 15.0 cfs; 9/12, 17.0 cfs; 9/18, 14.0 cfs; 9/26, 14.0 cfs; 10/1, 4.0 cfs.

1991: 6/26, 39 cfs; 6/27, 39 cfs; 7/3, 35 cfs; 7/10, 41 cfs; 7/17, 22 cfs; 7/24, 19 cfs; 7/31, 15.5 cfs; 8/1, 15 cfs; 8/7, 15 cfs; 8/14, 15 cfs; 8/21, 14 cfs; 8/28, 18 cfs; 9/4, 17 cfs; 9/11, 10 cfs; 9/18, 10 cfs; 9/25, 18 cfs; 9/27, 17 cfs; 10/1, 7 cfs (est).

1992: 5/6, 5.00 cfs; 5/9, 45.00 cfs; 5/15, 44.00 cfs; 5/21, 42.00 cfs; 5/24, 42.00 cfs; 5/26, 42.00 cfs; 6/2, 33.00 cfs; 6/8, 32.50 cfs; 6/10, 35.00 cfs; 6/17, 38.00 cfs; 6/19, 38.00 cfs; 6/24, 23.00 cfs; 7/1, 21.00 cfs; 7/8, 26.00 cfs; 7/15, 16.50 cfs; 7/18, 14.50 cfs; 7/22, 21.00 cfs; 7/24, 17.66 cfs; 7/28, 2.00 cfs (est); 7/29, 2.00 cfs (est); 8/5, 11.70 cfs; 8/12, 14.00 cfs; 8/17, 16.18 cfs; 8/17, 16.08 cfs; 8/19, 19.50 cfs; 8/26, 19.60 cfs; 9/2, 17.00 cfs; 9/9, 13.00 cfs; 9/17, 10.00 cfs; 9/22, 4.00 cfs; 9/26, 4.00 cfs.

1994: 4/29, 4.8 cfs (arrive), 3.5 cfs (depart); 5/17, 33.0 cfs; 5/18, 43.0 cfs; 5/24, 40.0 cfs; 5/26, 45.0 cfs; 6/4, 43.0 cfs; 6/8, 43.0 cfs; 6/11, 43.0 cfs; 6/15, 44.0 cfs; 6/18, 38.0 cfs; 6/21, 28.0 cfs; 6/25, 27.5 cfs; 6/29, 24.0 cfs; 7/2, 24.0 cfs; 7/6, 19.6 cfs; 7/14, 22.8 cfs; 7/20, 15.5 cfs; 7/27, 14.0 cfs; 7/30, 13.0 cfs; 8/3, 13.0 cfs; 8/10, 15.8 cfs; 8/13, 14.8 cfs; 8/17, 12.4 cfs; 8/21, 12.5 cfs; 8/24, 14.0 cfs; 8/27, 15.5 cfs; 8/31, 16.6 cfs (arrive), 2.0 cfs (depart); 9/4, 13.0 cfs; 9/7, 15.8 cfs; 9/10, 13.4 cfs; 9/14, 14.0 cfs; 9/16, 13.4 cfs; 9/21, 10.8 cfs; 9/27, 4.0 cfs.

1995: 5/2, 15.8 cfs; 5/15, 6.5 cfs; 5/17, 8.0 cfs; 5/19, 15 cfs; 5/23, 35.4 cfs; 5/30, 16.0 cfs (arrive), 23.7 cfs (depart); 6/2, 35.0 cfs; 6/4, 33.0 cfs; 6/6, 37.5 cfs; 6/8, 39.5 cfs; 6/13, 40.0 cfs; 6/24, 54.0 cfs; 6/30, 54.0 cfs; 7/7, 25.8 cfs; 7/14, 37.5 cfs; 7/22, 17.0 cfs; 7/26, 12.0 cfs; 7/29, 12.0 cfs; 7/31, 15.0 cfs; 8/2, 18.4 cfs; 8/3, 18.4 cfs; 8/9, 14.4 cfs; 8/16, 24.0 cfs; 8/19, 25.0 cfs; 8/23, 25.8 cfs; 8/30, 27.0 cfs; 9/6, 23.0 cfs; 9/13, 50.0 cfs; 9/16, 20.8 cfs; 9/20, 20.0 cfs; 9/27, 18.0 cfs; 10/3, 9.0 cfs.

1997: 5/16, 40.0 cfs; 5/26, 56.0 cfs; 6/19, 43.0 cfs; 6/26, 37.0 cfs; 6/27, 50.0 cfs (arrive), 42.5 cfs (depart); 6/29, 40.6 cfs; 7/2, 42.6 cfs; 7/9, 33.9 cfs; 7/11, 35.0 cfs (arrive), 33.9 cfs (depart); 7/16, 32.6 cfs (arrive), 26.0 cfs (depart); 7/23, 17.7 cfs (arrive), 24.9 cfs (depart); 7/27, 25.4 cfs (arrive), 24.9 cfs (depart); 7/30, 19.6 cfs (arrive), 23.7 cfs (depart); 8/5, 15.8 cfs; 8/8, 15.8 cfs (arrive), 15.8 cfs (depart); 8/13, 7.3 cfs (arrive), 10.1 cfs (depart); 8/21, 11.0 cfs; 8/29, 11.0 cfs; 8/30, 10.0 cfs; 9/3, 10.8 cfs (arrive), 22.0 cfs (depart); 9/10, 23.7 cfs (arrive), 25.0 cfs (depart); 9/17, 23.7 cfs (arrive), 25.0 cfs (depart); 9/24, 19.6 cfs; 9/30, 6.5 cfs.

1998: 6/8, 32.6 cfs; 7/7, 52 cfs; 7/14, 42 cfs; 7/22, 42.6 cfs; 7/29, 25 cfs (arrive), 22 cfs (depart); 8/1, 15.8 cfs (arrive), 5.5 cfs (depart); 8/5, 5 cfs; 8/12, 4 cfs; 8/19, 4.8 cfs (arrive), 8 cfs (depart); 8/26, 7.5 cfs; 9/2, 6.7 cfs (arrive), 12.4 cfs (depart); 9/9, 13 cfs (arrive), 25 cfs (depart); 9/16, 18 cfs (arrive), 23.7 cfs (depart); 9/23, 12.7 cfs (arrive), 15.1 cfs (depart); 9/30, 9.2 cfs (arrive), 17.7 cfs (depart); 10/6, 2.0 cfs (est) (arrive), 5.0 cfs (depart).

Supply: 1980, average; 1981, slightly below average; 1982, average; 1983, above average; 1984, above average; 1985, average; 1986, average; 1987, average; 1988, below average; 1989, below average; 1990, below average; 1991, slightly below average; 1992, below average; 1993, average; 1994, below average; 1995, slightly above average; 1996, average; 1997, average; 1998, slightly above average.

Source: State Engineer's Office, Annual Hydrographers' Reports.

**Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum**

Lamb Supply Canal, Blacks Fork River

Diversion Description: Diversion consists of a two 2½' x 3' slide gates. A small concrete and plank diversion dam exists.¹

Diversion Location:

Source: Black's Fork River, Trib. Green River

Section, Township, Range: 22, 14, 116

Conveyance Description: Open Channel Canal, approximately 6 miles in length.¹

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|---------------|--------|------------|--------------------------|---|
| 08-01-1889 | Terr. | Irrigation | | | | Supplementary Supply to 1,881.21 acres with Original Supply from Smith's Fork Creek |
| 01-25-1906 | 1586E | Irrigation | 200.00 | 2.85 | 2.85 | |
| 07-25-1916 | 3717E | Irrigation | 323.43 | 4.62 | 7.47 | |

Storage Rights: None.

Estimated Canal Losses: No significant losses are experienced in the canal. In fact, significant gains are made through inflow seepage.¹

Irrigation Practices: Lands are flood irrigated.¹

Crop Types / Consumptive Use: Lands are native grass hay and pasture.¹

Return Flows: This canal is primarily used to supply supplementary supply to Smith's Fork Creek. Of the lands that are irrigated directly from the canal, approximately 50% of the return flows are delivered to Smith's Fork south of Mountain View, Wyoming, and 50% are delivered to South Creek above Meeks Cabin Reservoir.

Other Operational Information: This canal is primarily used to supply supplementary supply to Smith's Fork Creek. Ditch is generally turned on in May and off in July.¹

Sources: 1) John Yarbrough, State Engineer's Office, Interview, May 4, 2000.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Lamb Supply Canal, Blacks Fork River, Diversion Data

| Wateryear | May | | June | | July | | August | | September | |
|-----------|---------------|--------------------|-------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|
| | Average (cfs) | Monthly Total (AF) | | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) |
| 1980 | | | | | | | | | | |
| 1981 | | | | | | | | | | |
| 1982 | | | | | | | | | | |
| 1983 | | | | | | | | | | |
| 1984 | | | 7.62 | 453.42 | 6.01 | 369.54 | 0.17 | 10.45 | 0.00 | 0.00 |
| 1985 | 3.42 | 210.29 | 2.61 | 155.31 | 4.04 | 248.41 | 9.37 | 576.14 | 6.68 | 397.49 |
| 1986 | | | | | 1.97 | 121.13 | 4.31 | 265.01 | 2.47 | 146.98 |
| 1987 | 9.71 | 597.04 | 12.45 | 740.83 | 4.11 | 252.71 | 5.69 | 349.86 | 4.08 | 242.78 |
| 1988 | | | | | | | | | | |
| 1989 | | | | | | | | | | |
| 1990 | 0.59 | 36.28 | 5.30 | 315.37 | 4.66 | 286.53 | 11.47 | 705.26 | 8.40 | 499.83 |
| 1991 | | | | | 2.26 | 138.96 | 1.27 | 78.09 | | |
| 1992 | 2.46 | 151.26 | 2.86 | 170.18 | 7.82 | 480.83 | 11.75 | 722.48 | 7.01 | 417.12 |
| 1993 | | | 7.89 | 469.49 | 3.60 | 221.36 | 4.34 | 266.86 | 0.95 | 56.53 |
| 1994 | 6.30 | 387.37 | 4.34 | 258.25 | 11.19 | 688.05 | 9.11 | 560.15 | 8.03 | 477.82 |
| 1995 | 1.58 | 97.15 | 7.44 | 442.71 | 7.85 | 482.68 | 1.77 | 108.83 | 0.99 | 58.91 |
| 1996 | | | | | 1.76 | 108.22 | 2.87 | 176.47 | 0.28 | 16.66 |
| 1997 | | | 8.40 | 499.83 | 2.34 | 143.88 | 4.67 | 287.15 | 1.66 | 98.78 |
| 1998 | | | | | 6.05 | 372.00 | 4.17 | 256.40 | 2.95 | 175.54 |

| | | | | | | | | | | |
|-----------|------|--------|------|--------|------|--------|------|--------|------|--------|
| Averages: | 4.01 | 246.57 | 6.55 | 389.49 | 4.90 | 301.10 | 5.46 | 335.63 | 3.63 | 215.70 |
|-----------|------|--------|------|--------|------|--------|------|--------|------|--------|

Blank cells are due to missing/insufficient data.

Average = Average Flow for ENTIRE month. Monthly Total = Total Volume used during month.

See Methodology section for explanations.

Spot data readings used in calculating averages in table on following pages.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Lamb Supply Canal, Blacks Fork River, Diversion Data

Data:

1984: 6/9, 1.0 cfs (est); 6/15, 7.9 cfs; 7/6, 20.3 cfs; 7/9, 7.0 cfs; 7/17, 1.0 cfs (est); 7/24, 1.0 cfs (est); 7/31, 2.0 cfs (est); 8/7, 8/14, 8/21, 9/4, off.

1985: 5/9, 0.5 cfs (est); 5/25, 7.5 cfs; 6/4, 3.2 cfs; 6/14, 3.2 cfs; 6/21, off; 7/9, 8.5 cfs; 7/16, off; 7/23, 6.0 cfs; 7/29, off; 8/12, 10.9 cfs; 8/19, 9.2 cfs; 8/23, 12.1 cfs; 8/28, 12.1 cfs; 9/3, 9.0 cfs; 9/10, 8.0 cfs; 9/17, 8.0 cfs; 9/24, 3.9 cfs; 10/9, 2 cfs (est).

1986: 5/20, 10 cfs (est); 7/7, off; 7/15, off; 7/22, 8.0 cfs; 7/29, off; 8/5, 8.0 cfs; 8/12, off; 8/19, 3.9 cfs; 8/26, 8.0 cfs; 9/2, off; 9/9, 3 cfs (est); 9/16, 3 cfs (est); 9/23, 3 cfs (est); 9/30, 3 cfs (est).

1987: 5/9, 5.0 cfs (est); 6/5, 24.0 cfs; 6/16, 7.4 cfs; 6/20, off; 6/29, 16.0 cfs; 7/6, 8.0 cfs; 7/13, off; 7/21, 6.0 cfs; 7/28, off; 8/6, 2.0 cfs; 8/11, 6.7 cfs; 8/18, 7.7 cfs; 8/25, 7.0 cfs; 9/1, 6.0 cfs; 9/8, 6.0 cfs; 9/15, 5.0 cfs; 9/22, 3.0 cfs; 9/29, 1.0 cfs (est).

1990: 5/24, 6.5 cfs; 5/26, off; 6/5, 6.5 cfs; 6/6, 7.5 cfs; 6/12, 6.7 cfs; 6/19, 6.7 cfs; 6/26, 2.2 cfs; 6/29, 2.2 cfs; 7/10, off; 7/17, 8.0 cfs; 7/24, 6.5 cfs; 7/31, off; 8/7, 10.0 cfs; 8/14, 10.0 cfs; 8/16, 11.0 cfs; 8/17, 16.5 cfs; 8/28, 12.0 cfs; 9/4, 5.0 cfs; 9/11, 11.0 cfs; 9/17, 11.0 cfs; 9/25, 8.0 cfs; 10/1, 3.5 cfs.

1991: 6/25, 0 cfs; 7/2, 0 cfs; 7/9, 10 cfs; 7/16, 0 cfs; 7/23, 0 cfs; 7/30, 0 cfs; 8/6, 0 cfs; 8/13, 2 cfs (est); 8/20, 0 cfs; 8/27, 3 cfs; 9/3, 3 cfs; 9/4, 0 cfs.

1992: 5/6, 0.00 cfs; 5/8, 0.00 cfs; 5/19, 7.50 cfs; 5/24, 7.50 cfs; 5/26, 2.90 cfs; 6/2, 0.00 cfs; 6/9, 2.00 cfs (est); 6/16, 0.00 cfs; 6/23, 6.00 cfs; 8/4, 9.25 cfs; 8/11, 12.00 cfs; 8/18, 15.00 cfs; 8/25, 11.00 cfs; 9/1, 11.00 cfs; 9/16, 11.00 cfs; 9/22, 4.10 cfs.

1993: 5/17, 0.00 cfs; 5/29, 6.00 cfs; 5/31, 6.70 cfs; 6/8, 6.90 cfs; 6/16, 7.90 cfs; 6/22, 9.25 cfs; 6/26, 8.00 cfs; 7/2, 9.80 cfs; 7/5, 7.20 cfs; 7/13, 0.00 cfs; 7/20, 6.03 cfs; 7/27, 0.00 cfs; 7/30, 1.50 cfs; 8/3, 2.16 cfs; 8/10, 4.00 cfs; 8/24, 6.00 cfs; 9/14, 0.00 cfs; 10/1, 0.50 cfs (est).

1994: 4/28, 1.0 cfs (arrive), 15.0 cfs (depart); 5/16, 4.0 cfs; 5/25, 2.8 cfs; 6/1, 7.5 cfs; 6/7, 0.0 cfs; 6/21, 10.0 cfs; 6/28, 0.0 cfs; 7/5, 4.0 cfs; 7/6, 12.7 cfs; 7/9, 13.9 cfs; 7/12, 13.0 cfs; 7/13, 13.0 cfs; 7/19, 13.3 cfs; 7/26, 10.4 cfs; 7/28, 13.0 cfs; 7/30, 11.2 cfs; 8/2, 14.4 cfs; 8/9, 19.0 cfs (arrive), 8.7 cfs (depart); 8/13, 6.7 cfs; 8/16, 6.7 cfs; 8/18, 6.7 cfs; 8/23, 6.7 cfs; 8/25, 6.3 cfs; 8/27, 6.5 cfs; 8/30, 6.5 cfs; 8/31, 10.6 cfs; 9/3, 9.0 cfs; 9/5, 10.0 cfs; 9/6, 9.2 cfs; 9/10, 9.5 cfs; 9/16, 9.5 cfs; 9/20, 9.5 cfs; 9/25, 5.0 cfs; 9/27, 5.0 cfs; 10/3, 1.0 cfs.

1995: 5/2, 1.0 cfs (est); 5/15, 1.0 cfs; 5/17, 1.0 cfs; 5/19, 1.0 cfs; 5/22, 1.0 cfs; 5/30, 3.5 cfs; 6/1, 7.5 cfs; 6/6, 8.0 cfs; 6/13, 7.2 cfs; 6/24, 6.5 cfs; 6/30, 9.1 cfs; 7/7, 7.4 cfs; 7/15, 8.5 cfs; 7/22, 10.6 cfs; 7/26, 7.0 cfs; 8/1, 2.6 cfs; 8/5, 0.0 cfs; 8/15, 0.0 cfs; 8/18, 0.0 cfs; 8/22, 6.0 cfs; 8/23, 8.0 cfs; 8/29, 0.5 cfs; 9/5, 6.0 cfs; 9/5, 0.0 cfs; 10/3, 1.0 cfs; 10/30, 0.5 cfs.

1996: 5/12, 8.0 cfs; 7/12, 0 cfs (arrive), 5 cfs (depart); 7/16, 4.5 cfs (arrive), 0 cfs (depart); 7/23, 0 cfs (arrive), 5.0 cfs (depart); 7/30, 5.13 cfs (arrive), 0 cfs (depart); 8/6, 0 cfs; 8/13, 0 cfs (arrive), 5.0 cfs (depart); 8/20, 7.7 cfs (arrive), 0 cfs (depart); 8/27, 5.6 cfs; 9/3, 3.9 cfs (arrive), 0 cfs (depart); 9/17, 0 cfs.

1997: 5/26, 7.7 cfs; 6/26, 10.8 cfs (arrive), 7.4 cfs (depart); 6/28, 5.8 cfs (arrive), 0.0 cfs (depart); 7/1, 0.0 cfs; 7/8, 0.0 cfs (arrive), 6.3 cfs (depart); 7/11, 6.3 cfs; 7/15, 5.6 cfs (arrive), 0.0 cfs (depart); 7/16, 0.0 cfs; 7/22, 0.0 cfs (arrive), 4.5 cfs (depart); 7/29, 4.0 cfs (arrive), 0.0 cfs (depart); 8/5, 0.0 cfs (arrive), 4.5 cfs (depart); 8/12, 1.0 cfs (est) (arrive), 0.0 cfs (depart); 8/19, 3.0 cfs; 8/20, 4.0 cfs (arrive), 8.2 cfs (depart); 8/26, 9.8 cfs (arrive), 0.0 cfs (depart); 9/2, 9.3 cfs (arrive), 0.0 cfs (depart); 9/9, 9.3 cfs (arrive), 0.0 cfs (depart); 9/16, 0.0 cfs; 9/23, 0.75 cfs; 9/30, 0.75 cfs (est).

1998: 7/7, 13 cfs; 7/21, 8.7 cfs (arrive), 0 cfs (depart); 7/28, 0 cfs (arrive), 9.3 cfs (depart); 8/4, 8 cfs (arrive), 0 cfs (depart); 8/11, 11.2 cfs (arrive), 5.6 cfs (depart); 8/18, 13 cfs (arrive), 0 cfs (depart); 8/25, 0 cfs; 9/1, 0 cfs (arrive), 10.9 cfs (depart); 9/8, 14.3 cfs (arrive), 0 cfs (depart); 9/15, 0 cfs; 9/22, 0 cfs; 9/29, 0 cfs; 10/6, 1.0 cfs (est).

Supply: 1980, average; 1981, slightly below average; 1982, average; 1983, above average; 1984, above average; 1985, average; 1986, average; 1987, average; 1988, below average; 1989, below average; 1990, below average; 1991, slightly below average; 1992, below average; 1993, average; 1994, below average; 1995, slightly above average; 1996, average; 1997, average; 1998, slightly above average.

Source: State Engineer's Office. Annual Hydrographers' Reports.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Maude Ditch, Big Muddy Creek

Diversion Description: Information not available at time of report.

Diversion Location:

Source: Big (or West) Muddy Creek, Trib. Black's Fork River, Trib. Green River
Section, Township, Range: 14, 13, 118

Conveyance Description: Open Channel Canal.

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|------------------|----------|---------------|--------------------------|----------|
| 07-05-1911 | 10856 | Irrigation | 1,378.41 | 19.68 | 19.68 | |

Storage Rights: None.

Estimated Canal Losses: Information not available at time of report.

Irrigation Practices: Information not available at time of report.

Crop Types / Consumptive Use: Information not available at time of report.

Return Flows: Return Flows are delivered to Big Muddy Creek above Byrne Reservoir.

Other Operational Information: Information not available at time of report.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Maude Ditch, Big Muddy Creek, Diversion Data

No Diversion Data Available.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Outlet Cross Ditch, Big Muddy Creek

Diversion Description: Information not available at time of report.

Diversion Location:

Source: Big (or West) Muddy Creek, Trib. Black's Fork River, Trib. Green River
Section, Township, Range: 19, 14, 117

Conveyance Description: Open Channel Canal.

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|------------------|--------|---------------|--------------------------|----------|
| 09-29-1896 | 1337 | Irrigation | 603.95 | 8.63 | 8.63 | |
| 06-14-1902 | 860E | Irrigation | 300.00 | 4.28 | 12.91 | |

Storage Rights: None.

Estimated Canal Losses: Information not available at time of report.

Irrigation Practices: Information not available at time of report.

Crop Types / Consumptive Use: Information not available at time of report.

Return Flows: Return flows are delivered to Big Muddy Creek above C.L. Byrne No. 2 ditch.

Other Operational Information: Information not available at time of report.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Outlet Cross Ditch, Big Muddy Creek, Diversion Data

No Diversion Data Available.

Green River Basin, Wyoming; Key Structures and Diversions Description and Operation Memorandum

Pine Grove Ditch, Blacks Fork River

Diversion Description: Diversion consists of two 4' by 4' slide gates mounted on a concrete structure. A wood plank diversion dam exists.¹

Diversion Location:

Source: Black's Fork River, Trib. Green River

Section, Township, Range: 28, 14, 116

Conveyance Description: Open Channel Canal, approximately 25 miles in length.¹

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|-----------------------------------|----------|------------|--------------------------|--|
| 06-09-1894 | 741 | Domestic, Irrigation, Stock | 320.00 | 4.60 | 4.60 | POD/MOC change from Ingersol Ditch. |
| 03-08-1897 | 1428 | Irrigation | 3,688.81 | 52.64 | 57.24 | |
| 06-02-1898 | 344E | Irrigation | 160.00 | 2.28 | 59.52 | POD/MOC change from Ingersol Ditch. |
| 10-05-1899 | 2309 | Irrigation | 120.00 | 1.72 | 61.24 | POD/MOC change from Wall Ditch. |
| 12-03-1901 | 766E | Irrigation | 72.70 | 1.04 | 62.28 | |
| 12-31-1903 | 1285E | Domestic, Irrigation | 1,381.42 | 19.71 | 81.99 | |
| 06-01-1903 | 1068E | Irrigation | 160.00 | 2.28 | 84.27 | POD/MOC change from Wall Ditch. |
| 10-06-1933 | 4955E | Domestic, Irrigation | 283.00 | 4.04 | 88.31 | POD/MOC change from Ingersol Ditch. |

Storage Rights: None.

Estimated Canal Losses: Considerably greater than typical (20-25%).¹

Irrigation Practices: Lands are flood irrigated.¹

Crop Types / Consumptive Use: Lands are native grass hay and pasture.¹

Return Flows: Approximately 90% of the return flows are delivered to Six Mile Creek above Black's Fork, 5% are delivered to Brewster Draw to Black's Fork above Six Mile Creek, and 5% to Three Mile Creek.

Other Operational Information: The canal is typically turned on during the third week of April.¹

Sources: 1) John Yarbrough, State Engineer's Office, Interview, May 4, 2000.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Pine Grove Ditch, Blacks Fork River

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Pine Grove Ditch, Blacks Fork River, Diversion Data

| Wateryear | May | | June | | July | | August | | September | |
|-----------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|
| | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) |
| 1980 | 0.06 | 3.97 | 35.39 | 2,106.00 | 29.94 | 1,841.00 | 13.35 | 821.00 | 12.84 | 764.00 |
| 1981 | 1.11 | 68.00 | 32.97 | 1,962.00 | 15.61 | 960.00 | 8.52 | 524.00 | 6.47 | 385.00 |
| 1982 | 1.53 | 94.08 | 39.20 | 2,332.56 | 33.62 | 2,067.21 | 10.74 | 660.38 | 6.02 | 358.21 |
| 1983 | | | | | | | | | | |
| 1984 | | | | | | | | | | |
| 1985 | 75.18 | 4,622.64 | 111.18 | 6,615.67 | 43.84 | 2,695.62 | 6.37 | 391.68 | 6.51 | 387.37 |
| 1986 | | | 83.01 | 4,939.44 | 65.66 | 4,037.28 | 6.54 | 402.13 | 10.96 | 652.17 |
| 1987 | 98.13 | 6,033.78 | 108.82 | 6,475.24 | 28.48 | 1,751.17 | 3.79 | 233.04 | | |
| 1988 | | | | | | | | | | |
| 1989 | | | | | | | | | | |
| 1990 | 31.84 | 1,957.77 | 104.40 | 6,212.23 | 33.17 | 2,039.54 | 4.85 | 298.21 | 5.08 | 302.28 |
| 1991 | | | 50.89 | 3,028.17 | 51.27 | 3,152.47 | 8.11 | 498.66 | 10.32 | 614.08 |
| 1992 | 65.64 | 4,036.05 | 71.94 | 4,280.73 | 28.75 | 1,767.77 | 3.03 | 186.31 | 5.19 | 308.83 |
| 1993 | 48.49 | 2,981.53 | 99.15 | 5,899.83 | 77.16 | 4,744.38 | 11.21 | 689.28 | 17.02 | 1,012.76 |
| 1994 | 64.50 | 3,965.95 | 69.14 | 4,114.12 | 15.82 | 972.73 | 0.88 | 54.11 | 2.82 | 167.80 |
| 1995 | 27.91 | 1,716.12 | 106.56 | 6,340.76 | 111.12 | 6,832.50 | 38.36 | 2,358.66 | 17.72 | 1,054.41 |
| 1996 | 33.98 | 2,089.35 | 74.82 | 4,452.10 | 62.07 | 3,816.54 | 15.67 | 963.51 | 17.77 | 1,057.39 |
| 1997 | | | 92.01 | 5,474.98 | 53.39 | 3,282.82 | 12.43 | 764.29 | 6.82 | 405.82 |
| 1998 | | | 82.67 | 4,919.21 | 85.59 | 5,262.72 | 24.31 | 1,494.76 | 9.76 | 580.76 |

| | | | | | | | | | | |
|-----------|-------|----------|-------|----------|-------|----------|-------|--------|------|--------|
| Averages: | 40.76 | 2,506.29 | 77.48 | 4,610.20 | 49.03 | 3,014.92 | 11.21 | 689.33 | 9.66 | 575.06 |
|-----------|-------|----------|-------|----------|-------|----------|-------|--------|------|--------|

Blank cells are due to missing/insufficient data.

Average = Average Flow for ENTIRE month. Monthly Total = Total Volume used during month.

See Methodology section for explanations.

Spot data readings used in calculating averages in table on following pages.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Pine Grove Ditch, Blacks Fork River, Diversion Data

Data:

1980: May, 3.97 AF; June, 2106 AF; July, 1841 AF; August, 821 AF; September, 764 AF. (Totals computed by Hydrographer)

1981: May, 68.0 AF; June, 1962 AF; July, 960 AF; August, 524 AF; September, 385 AF. (Totals computed by Hydrographer)

1982: 5/8, 1.0 cfs; 5/22, 0.9 cfs; 5/30, 0.0 cfs; 5/31, 16 cfs; 6/1, 29 cfs; 6/3, 27 cfs; 6/4, 26 cfs; 6/7, 24 cfs; 6/8, 42 cfs; 6/10, 30 cfs; 6/11, 41 cfs; 6/14, 46 cfs; 6/28, 43 cfs; 7/1, 40 cfs; 7/12, 32 cfs; 7/26, 40 cfs; 7/28, 40 cfs; 7/29, 20 cfs; 7/30, 9.3 cfs; 7/31, 9.0 cfs; 8/1, 8.0 cfs; 8/10, 16 cfs; 8/11, 15 cfs; 8/12, 15 cfs; 8/13, 14 cfs; 8/14, 13 cfs; 8/15, 11 cfs; 8/16, 10 cfs; 8/17, 11 cfs; 8/18, 13 cfs; 8/19, 11 cfs; 8/20, 9.9 cfs; 8/21, 9.9 cfs; 8/22, 9.6 cfs; 8/27, 7.5 cfs; 8/28, 7.7 cfs; 8/29, 8.6 cfs; 8/30, 7.2 cfs; 8/31, 6.4 cfs; 9/1, 5.8 cfs; 9/2, 5.6 cfs; 9/3, 5.6 cfs; 9/8, 8.3 cfs; 9/9, 8.6 cfs; 9/13, 14 cfs; 9/14, 16 cfs; 9/18, 17 cfs. (Note: Unclear which data are actual observations and which are interpolated estimates.)

1985: 5/9, off; 5/11, 39.4 cfs; 5/21, 130 cfs; 5/28, 130 cfs; 6/14, 160 cfs; 6/15, 90.3 cfs; 6/21, 97.3 cfs; 7/1, 46 cfs (est); 7/9, 71.4 cfs; 7/16, 85.2 cfs; 7/23, 4.5 cfs (est); 8/6, off; 8/28, 12.6 cfs; 9/3, 16.0 cfs; 9/10, 11.0 cfs; 9/17, 4 cfs (est); 9/24, 1 cfs (est).

1986: 5/20, 100 cfs (est); 7/7, 69.8 cfs; 7/15, 83.5 cfs; 7/22, 86.0 cfs; 7/29, 15.1 cfs; 8/5, 14.7 cfs; 8/12, off; 8/19, 10.2 cfs; 8/26, off; 9/2, 8 cfs (est); 9/9, off; 9/16, 39.4 cfs; 9/23, off; 9/30, 5 cfs (est).

1987: 5/9, 30.0 cfs; 5/11, 130.0 cfs; 6/9, 150.0 cfs; 6/16, 90.0 cfs; 6/20, 64.5 cfs; 6/23, 78.0 cfs; 6/29, 100.0 cfs; 7/6, 64.5 cfs; 7/13, 35.0 cfs; 7/21, off; 9/1, 6.0 cfs (est); 9/8, 38.0 cfs; 9/15, 16.0 cfs.

1990: 5/12, 2.8 cfs; 5/14, 4.6 cfs; 5/22, 62.3 cfs; 5/24, 85.0 cfs; 5/26, 64.5 cfs; 5/29, 64.9 cfs; 6/5, 106.0 cfs; 6/6, 113.0 cfs; 6/10, 123.0 cfs; 6/12, 129.0 cfs; 6/19, 100.0 cfs; 6/26, 96.0 cfs; 6/29, 82.0 cfs; 7/3, 88.0 cfs; 7/10, 71.2 cfs; 7/17, 4.6 cfs (est); 7/31, off; 8/7, 9.5 cfs; 8/14, 2.5 cfs (est); 9/4, 6.5 cfs; 9/11, 7.0 cfs (est); 9/17, 8.5 cfs; 9/25, off; 10/1, 2.0 cfs (est).

1991: 6/15, 125 cfs; 6/25, 90 cfs; 6/27, 72 cfs; 7/2, 73 cfs; 7/9, 77 cfs; 7/16, 58 cfs; 7/23, 42 cfs; 7/30, 4 cfs (est); 8/6, 4 cfs (est); 8/13, 7 cfs; 8/20, 18 cfs; 8/27, 5 cfs; 9/3, 5 cfs; 9/4, 0 cfs; 9/24, 22 cfs; 10/1, 0 cfs.

1992: 5/6, 28.00 cfs; 5/8, 64.50 cfs; 5/14, 61.00 cfs; 5/15, 75.00 cfs; 5/19, 93.00 cfs; 5/21, 93.00 cfs; 5/24, 87.50 cfs; 5/26, 90.00 cfs; 5/26, 95.00 cfs; 6/2, 78.50 cfs; 6/9, 81.00 cfs; 6/16, 76.00 cfs; 6/18, 74.00 cfs; 6/23, 59.50 cfs; 6/24, 64.10 cfs; 6/30, 58.60 cfs; 7/7, 36.60 cfs; 7/11, 36.60 cfs; 7/14, 19.50 cfs; 7/21, 32.00 cfs; 7/28, 14.00 cfs; 8/4, 3.00 cfs (est); 8/11, 2.00 cfs; 8/18, 2.00 cfs (est); 8/25, 1.50 cfs (est); 9/1, 8.25 cfs; 9/8, 10.25 cfs; 9/16, 5.40 cfs; 9/22, 4.00 cfs.

1993: 5/17, 84.00 cfs; 5/19, 88.00 cfs; 5/21, 93.50 cfs; 5/29, 112.00 cfs; 6/9, 92.00 cfs; 6/16, 93.00 cfs; 6/22, 105.00 cfs; 6/26, 105.00 cfs; 7/2, 102.00 cfs; 7/5, 93.00 cfs; 7/8, 86.20 cfs; 7/9, 66.60 cfs; 7/13, 90.50 cfs; 7/17, 95.00 cfs; 7/20, 96.33 cfs; 7/23, 39.50 cfs; 7/27, 72.50 cfs; 8/3, 10.60 cfs; 8/4, 6.60 cfs; 8/10, 26.50 cfs; 8/17, 6.60 cfs; 8/24, 7.00 cfs; 8/25, 2.50 cfs; 8/31, 6.00 cfs; 9/7, 19.50 cfs; 9/14, 9.00 cfs; 9/21, 32.00 cfs; 10/1, 5.00 cfs (est); 10/8, 6.00 cfs.

1994: 4/25, 7.0 cfs; 4/28, 16.5 cfs; 4/29, 18.8 cfs; 5/14, 29.8 cfs (arrive), 28.1 cfs (depart); 5/16, 92.9 cfs; 5/17, 88.1 cfs; 5/18, 88.0 cfs; 5/24, 95.8 cfs; 6/1, 110.0 cfs; 6/3, 105.0 cfs; 6/7, 104.0 cfs; 6/10, 83.3 cfs; 6/14, 83.3 cfs; 6/17, 78.6 cfs; 6/21, 24.0 cfs; 6/25, 26.0 cfs; 6/28, 55.5 cfs; 7/1, 49.0 cfs; 7/5, 38.2 cfs; 7/6, 45.0 cfs; 7/12, 17.4 cfs; 7/13, 15.0 cfs; 7/19, 2.7 cfs; 7/26, 0.9 cfs; 7/28, 0.9 cfs; 7/30, 0.9 cfs; 8/2, 0.8 cfs; 8/13, 0.5 cfs; 8/16, 0.5 cfs; 8/18, 0.0 cfs; 8/23, 0.5 cfs; 8/30, 2.6 cfs; 9/6, 2.6 cfs (arrive), 0.0 cfs (depart); 9/10, 2.7 cfs; 9/16, 3.0 cfs; 9/20, 1.0 cfs; 9/27, 5.0 cfs; 10/3, 5.0 cfs.

1995: 5/17, 4.0 cfs (est); 5/19, 7.0 cfs; 5/22, 61.2 cfs; 5/25, 81.0 cfs; 5/30, 76.0 cfs; 6/1, 70.0 cfs; 6/6, 94.0 cfs; 6/13, 94.0 cfs; 6/24, 129.0 cfs; 6/30, 129.0 cfs; 7/7, 119.0 cfs; 7/15, 129.0 cfs; 7/22, 101.0 cfs; 7/26, 88.0 cfs; 8/1, 88.7 cfs; 8/5, 56.3 cfs; 8/8, 57.7 cfs; 8/15, 62.2 cfs; 8/18, 25.4 cfs; 8/22, 6.0 cfs; 8/23, 10.6 cfs; 9/5, 14.0 cfs; 9/5, 14.5 cfs; 9/12, 14.5 cfs; 9/19, 13.0 cfs; 9/26, 32.0 cfs; 10/3, 11.0 cfs; 10/30, 5.0 cfs.

1996: 5/11, 40.0 cfs (est); 7/2, 90.3 cfs (arrive), 61.4 cfs (depart); 7/12, 79.3 cfs (arrive), 76.5 cfs (depart); 7/16, 83.3 cfs; 7/23, 79.3 cfs (arrive), 29.2 cfs (depart); 7/30, 28.0 cfs (arrive), 20.8 cfs (depart); 8/6, 22.0 cfs (arrive), 11.0 cfs (depart); 8/13, 16.5 cfs; 8/20, 18.8 cfs (arrive), 8.6 cfs (depart); 8/27, 15.3 cfs; 9/2, 14.3 cfs (arrive), 17 cfs (depart); 9/3, 15.3 cfs; 9/17, 23.0 cfs; 9/19, 38.0 cfs; 9/24, 31.4 cfs.

1997: 5/26, 97.0 cfs; 6/26, 92.0 cfs; 6/27, 87.7 cfs; 6/28, 64.6 cfs; 7/1, 98.0 cfs; 7/8, 80.0 cfs; 7/15, 75.3 cfs (arrive), 34.3 cfs (depart); 7/16, 41.0 cfs; 7/17, 41.0 cfs; 7/22, 31.5 cfs; 7/29, 28.7 cfs (arrive), 2.7 cfs (est) (depart); 7/30, 2.7 cfs (arrive), 8.0 cfs (est) (depart); 8/5, 6.0 cfs (est) (arrive), 17.0 cfs (depart); 8/12, 15.3 cfs (arrive), 13.0 cfs (depart); 8/19, 17.3 cfs; 8/20, 17.3 cfs (arrive), 14.7 cfs (depart); 8/26, 5.4 cfs (est); 9/2, 16.9 cfs; 9/9, 11.0 cfs (arrive), 10.0 cfs (depart); 9/16, 2.0 cfs (est); 9/23, 4.0 cfs (est); 9/30, 4.0 cfs (est).

1998: 6/8, 115.6 cfs; 7/7, 96 cfs; 7/21, 84 cfs (arrive), 69.5 cfs (depart); 7/24, 73.7 cfs (arrive), 80 cfs (depart); 7/28, 79.4 cfs; 8/4, 39 cfs; 8/11, 36.3 cfs (arrive), 36.5 cfs (depart); 8/18, 35 cfs (arrive), 4.6 cfs (est) (depart); 8/25, 4.6 cfs (est) (arrive),

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Description and Operation Memorandum

Pine Grove Ditch, Blacks Fork River, Diversion Data

9 cfs (depart); 9/1, 9.5 cfs (arrive), 0.1 cfs (est) (depart); 9/8, 17.3 cfs (arrive), 13 cfs (depart); 9/15, 11 cfs (arrive), 5 cfs (est) (depart); 9/22, 4 cfs (est) (arrive), 0 cfs (depart); 9/29, 22.3 cfs; 10/6, 0 cfs.

Supply: 1980, average; 1981, slightly below average; 1982, average; 1983, above average; 1984, above average; 1985, average; 1986, average; 1987, average; 1988, below average; 1989, below average; 1990, below average; 1991, slightly below average; 1992, below average; 1993, average; 1994, below average; 1995, slightly above average; 1996, average; 1997, average; 1998, slightly above average.

Source: State Engineer's Office, Annual Hydrographers' Reports.

**Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum**

Shirk Number 1 Ditch, Black's Fork River

Diversion Description: Diversion consists of a single 3' x 4' slide gate mounted on a concrete structure.¹

Diversion Location:

Source: Black's Fork River, Trib. Green River

Section, Township, Range: 5, 13, 116

Conveyance Description: Open Channel Canal, approximately 5 miles in length.¹

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|-----------------------------------|--------|------------|--------------------------|----------------------------------|
| 09-01-1892 | 333 | Domestic, Irrigation, Stock | 398.00 | 5.81 | 5.81 | |
| 06-21-1920 | 4114E | Irrigation | 130.00 | 1.86 | 7.67 | |
| 08-11-1920 | 4170E | Domestic, Irrigation, Stock | 69.00 | 0.99 | 8.66 | 86.00 acres Supplementary Supply |
| 07-20-1943 | 5353E | Irrigation, Stock | 438.50 | 6.26 | 14.92 | |

Storage Rights: Meeks Cabin.

Estimated Canal Losses: Typical (10%) losses are experienced by the canal except when area stream tributaries are flowing. When these tributaries are flowing, considerable gains are made from them.¹

Irrigation Practices: Lands are flood irrigated.¹

Crop Types / Consumptive Use: Water is used to irrigate native grass hay and pasture.¹

Return Flows: Approximately 90% of the return flows are delivered to the Pine Grove Canal, and approximately 10% of the return flows are delivered to Jones Creek to Black's Fork..

Other Operational Information: Ditch is generally turned on in May and off in July.¹

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| Sources: 1) John Yarbrough, State Engineer's Office, Interview, May 4, 2000. |
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Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Shirk Number 1 Ditch, Black's Fork River, Diversion Data

| Water year | May | | June | | July | | August | | September | |
|------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|
| | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) |
| 1980 | | | | | | | | | | |
| 1981 | | | | | | | | | | |
| 1982 | | | | | | | | | | |
| 1983 | | | | | | | | | | |
| 1984 | | | | | | | | | | |
| 1985 | 5.32 | 327.11 | 7.40 | 440.33 | 5.99 | 368.31 | 1.03 | 63.33 | | |
| 1986 | | | 6.00 | 357.02 | 5.94 | 365.24 | 1.74 | 106.99 | 0.00 | 0.00 |
| 1987 | | | 4.99 | 296.93 | 5.70 | 350.48 | 1.20 | 73.79 | | |
| 1988 | | | | | | | | | | |
| 1989 | | | | | | | | | | |
| 1990 | 3.59 | 220.74 | 8.68 | 516.50 | 4.16 | 255.79 | | | | |
| 1991 | | | | | 6.82 | 419.35 | | | | |
| 1992 | 4.95 | 304.36 | 6.10 | 362.98 | 5.61 | 344.95 | | | | |
| 1993 | 2.61 | 160.48 | 9.14 | 543.87 | 6.03 | 370.77 | 5.13 | 315.43 | | |
| 1994 | 3.64 | 223.81 | 6.04 | 359.40 | 3.47 | 213.36 | 0.81 | 49.80 | 0.00 | 0.00 |
| 1995 | | | 4.73 | 281.45 | 3.39 | 208.44 | 6.65 | 408.89 | 0.32 | 19.04 |
| 1996 | 2.77 | 170.32 | 3.29 | 195.77 | 3.50 | 215.21 | 3.46 | 212.75 | 1.62 | 96.40 |
| 1997 | | | | | 5.50 | 338.18 | 1.92 | 118.06 | 1.14 | 67.83 |
| 1998 | | | 5.25 | 312.40 | 3.48 | 213.98 | 2.76 | 169.71 | 1.28 | 76.17 |

| | | | | | | | | | | |
|-----------|------|--------|------|--------|------|--------|------|--------|------|-------|
| Averages: | 3.81 | 234.47 | 6.16 | 366.66 | 4.97 | 305.34 | 2.74 | 168.75 | 0.73 | 43.24 |
|-----------|------|--------|------|--------|------|--------|------|--------|------|-------|

Blank cells are due to missing/insufficient data.

Average = Average Flow for ENTIRE month. Monthly Total = Total Volume used during month.

See Methodology section for explanations.

Spot data readings used in calculating averages in table on following pages.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Shirk Number 1 Ditch, Black's Fork River, Diversion Data

Data:

1985: 5/9, 2.8 cfs; 5/25, 9.5 cfs; 6/4, 9.5 cfs; 6/21, 6.1 cfs; 7/1, 6.1 cfs; 7/9, 6.1 cfs; 7/16, 6.1 cfs; 7/23, 6.1 cfs; 7/29, 6.1 cfs; 8/6, off; 8/12, 3 cfs; 8/21, off.
1986: 5/20, 6 cfs (est); 7/7, 6.0 cfs; 7/15, 6.0 cfs; 7/22, 6.0 cfs; 7/29, 6.0 cfs; 8/5, 3 cfs (est); 8/12, 4 cfs (est); 8/19, 8/26, 9/2, 9/9, 9/16, 9/23, 9/30, off.
1987: 6/9, 9.0 cfs (est); 6/16, 8.0 cfs; 6/20, 5.7 cfs; 6/23, 5.7 cfs; 6/29, 5.7 cfs; 7/6, 5.7 cfs; 7/13, 5.7 cfs; 7/21, 5.7 cfs; 7/28, 5.7 cfs; 8/4, 5.7 cfs; 8/11, off.
1990: 5/14, 5.6 cfs; 5/22, 5.6 cfs; 5/24, 9.0 cfs; 5/26, 5.8 cfs; 5/29, 5.8 cfs; 6/5, 9.4 cfs; 6/6, 10.4 cfs; 6/12, 11.1 cfs; 6/19, 9.3 cfs; 6/26, 5.7 cfs; 6/29, 5.7 cfs; 7/3, 5.7 cfs; 7/10, 5.7 cfs; 7/17, 5.7 cfs; 7/24, off; 7/31, 4.0 cfs; 8/14, 2.0 cfs; 8/14, off.
1991: 6/25, 6.0 cfs; 6/27, 6.0 cfs; 7/2, 6.0 cfs; 7/3, 6.0 cfs; 7/9, 6.0 cfs; 7/16, 6.0 cfs; 7/23, 9.8 cfs; 7/30, 5.8 cfs; 8/6, 5.8 cfs; 8/13, 0 cfs.
1992: 5/8, 5.00 cfs; 5/14, 5.80 cfs; 5/19, 5.80 cfs; 5/21, 10.40 cfs; 5/24, 5.80 cfs; 5/26, 5.80 cfs; 6/2, 7.80 cfs; 6/9, 5.80 cfs; 6/16, 5.80 cfs; 6/18, 5.80 cfs; 6/23, 5.80 cfs; 6/30, 5.80 cfs; 7/7, 7.80 cfs; 7/14, 5.80 cfs; 7/28, 4.00 cfs; 8/4, 4.00 cfs.
1993: 5/17, 0.00 cfs; 5/29, 9.00 cfs; 6/16, 8.46 cfs; 6/16, 10.40 cfs; 6/22, 10.50 cfs; 6/26, 8.50 cfs; 7/2, 8.80 cfs; 7/5, 5.80 cfs; 7/8, 5.80 cfs; 7/13, 5.80 cfs; 7/20, 5.74 cfs; 7/27, 5.80 cfs; 8/3, 5.80 cfs; 8/24, 5.10 cfs; 9/14, 0.00 cfs.
1994: 5/16, 6.0 cfs; 6/1, 8.1 cfs; 6/3, 6.1 cfs; 6/7, 5.8 cfs; 6/10, 6.9 cfs; 6/14, 5.8 cfs; 6/17, 5.8 cfs; 6/21, 5.8 cfs; 6/28, 5.8 cfs; 7/1, 5.8 cfs; 7/5, 0.0 cfs; 7/12, 6.3 cfs; 7/13, 6.3 cfs; 7/19, 6.6 cfs; 7/20, 0.0 cfs (arrive), 0.8 cfs (depart); 8/2, 3.7 cfs; 8/9, 3.5 cfs (arrive), 0.0 cfs (depart); 8/13, 8/23, 8/30, 9/6, 9/10, 9/20, 9/27, 0.0 cfs.
1995: 5/30, 0.0 cfs; 6/6, 0.5 cfs; 6/24, 8.5 cfs; 6/30, 8.6 cfs; 7/7, 1.1 cfs; 7/15, 6.6 cfs; 7/22, 2.3 cfs; 7/26, 2.5 cfs; 8/1, 0.0 cfs; 8/8, 5.8 cfs; 8/15, 7.8 cfs; 8/18, 7.6 cfs; 8/22, 8.8 cfs; 8/29, 8.8 cfs; 9/5, 10/3, 10/30, 0.0 cfs.
1996: 5/13, 5.0 cfs (est); 7/2, 2.49 cfs (arrive), 5.24 cfs (depart); 7/12, 5.5 cfs; 7/23, 0 cfs (arrive), 5.8 cfs (depart); 7/30, 0 cfs; 8/6, 6.0 cfs; 8/13, 6.0 cfs (arrive), 0 cfs (depart); 8/20, 0 cfs; 8/27, 5.4 cfs; 9/3, 5.4 cfs; 9/17, 9/24, 0 cfs.
1997: 6/28, 3.6 cfs (arrive), 4.5 cfs (depart); 7/1, 3.6 cfs (arrive), 4.4 cfs (depart); 7/8, 5.8 cfs; 7/15, 5.8 cfs; 7/22, 5.3 cfs (arrive), 5.8 cfs (depart); 7/29, 5.1 cfs (arrive), 5.8 cfs (depart); 8/5, 5.4 cfs (arrive), 0.0 cfs (depart); 8/12, 0.0 cfs; 8/19, 0.0 cfs (arrive), 3.6 cfs (depart); 8/26, 3.6 cfs; 9/2, 0.0 cfs; 9/9, 3.6 cfs; 9/16, 0.5 cfs; 9/23, 0.5 cfs; 9/30, 0.5 cfs (est).
1998: 6/8, 1.8 cfs; 6/25, 11 cfs; 7/7, 0.5 cfs (est); 7/21, 4.8 cfs; 7/28, 5 cfs; 8/4, 4.6 cfs; 8/11, 3 cfs (arrive), 5.8 cfs (depart); 8/18, 0 cfs; 8/25, 0 cfs (arrive), 3.5 cfs (depart); 9/1, 3.5 cfs; 9/8, 1 cfs; 9/15, 1 cfs; 9/22, 1 cfs; 9/29, 1 cfs; 10/6, 0 cfs.

Supply: 1980, average; 1981, slightly below average; 1982, average; 1983, above average; 1984, above average; 1985, average; 1986, average; 1987, average; 1988, below average; 1989, below average; 1990, below average; 1991, slightly below average; 1992, below average; 1993, average; 1994, below average; 1995, slightly above average; 1996, average; 1997, average; 1998, slightly above average.

Source: State Engineer's Office, Annual Hydrographers' Reports.

**Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum**

Shirk Number 2 Ditch, Black's Fork River

Diversion Description: Diversion consists.¹

Diversion Location:

Source: Black's Fork River, Trib. Green River

Section, Township, Range: 22,15,116

Conveyance Description: Open Channel Canal.¹

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|-----------------------------------|--------|------------|--------------------------|----------|
| 10-23-1893 | 602 | Domestic, Irrigation, Stock | 146.80 | 2.09 | 2.09 | |
| 10-29-1900 | 594E | Irrigation | 320.00 | 4.56 | 6.65 | |
| 06-08-1916 | 3737E | Domestic, Irrigation | 400.00 | 5.71 | 12.36 | |
| 06-24-1941 | 5311E | Domestic, Irrigation | 76.00 | 1.09 | 13.45 | |

Storage Rights: None.

Estimated Canal Losses: Typical (10%) losses.¹

Irrigation Practices: Lands are flood irrigated.¹

Crop Types / Consumptive Use: Water is used to irrigate native grass hay and pasture.¹

Return Flows: Return flows are delivered to Smith's Fork River between Willow Creek and Lambs Supply Canal.

Other Operational Information: Ditch is generally turned on in May and off in July.¹

Sources: 1) John Yarbrough, State Engineer's Office, Interview, May 4, 2000.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Shirk Number 2 Ditch, Black's Fork River, Diversion Data

| Wateryear | May | | June | | July | | August | | September | |
|-----------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|
| | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) |
| 1980 | | | | | | | | | | |
| 1981 | | | | | | | | | | |
| 1982 | | | | | | | | | | |
| 1983 | | | | | | | | | | |
| 1984 | | | | | | | | | | |
| 1985 | 4.84 | 297.60 | 9.99 | 594.45 | 4.26 | 261.94 | 2.93 | 180.16 | | |
| 1986 | | | 10.39 | 618.25 | 5.28 | 324.65 | 1.71 | 105.14 | 1.60 | 95.21 |
| 1987 | 5.51 | 338.80 | 9.89 | 588.50 | 5.39 | 331.42 | 1.12 | 68.87 | 2.10 | 124.96 |
| 1988 | | | | | | | | | | |
| 1989 | | | | | | | | | | |
| 1990 | 5.07 | 311.74 | 10.92 | 649.79 | 3.75 | 230.58 | 2.16 | 132.81 | 2.18 | 129.72 |
| 1991 | | | | | 5.37 | 330.19 | 2.06 | 126.66 | | |
| 1992 | 6.09 | 374.46 | 4.21 | 250.51 | 3.77 | 231.81 | 2.93 | 180.16 | 1.44 | 85.69 |
| 1993 | 3.83 | 235.50 | 8.62 | 512.93 | 4.34 | 266.86 | 1.94 | 119.29 | 3.38 | 201.12 |
| 1994 | 7.37 | 453.16 | 5.55 | 330.25 | 1.73 | 106.37 | 1.39 | 85.47 | | |
| 1995 | 1.43 | 87.93 | 4.67 | 277.88 | 6.51 | 400.28 | 3.13 | 192.46 | 1.64 | 97.59 |
| 1996 | 3.16 | 194.30 | 6.28 | 373.69 | 1.80 | 110.68 | 2.08 | 127.89 | 1.54 | 91.64 |
| 1997 | | | 7.10 | 422.48 | 2.91 | 178.93 | 3.20 | 196.76 | 1.12 | 66.64 |
| 1998 | | | 4.51 | 268.36 | 9.43 | 579.83 | 2.40 | 147.57 | 1.48 | 88.07 |
| Averages: | 4.66 | 286.69 | 7.47 | 444.28 | 4.55 | 279.46 | 2.25 | 138.60 | 1.83 | 108.96 |

Blank cells are due to missing/insufficient data.

Average = Average Flow for ENTIRE month. Monthly Total = Total Volume used during month.

See Methodology section for explanations.

Spot data readings used in calculating averages in table on following pages.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Shirk Number 2 Ditch, Black's Fork River, Diversion Data

Data:

1985: 5/9, off; 5/25, 9.8 cfs; 6/4, 11.1 cfs; 6/14, 11.1 cfs; 6/21, 9.3 cfs; 6/24, 9.3 cfs; 7/1, 6.9 cfs; 7/8, 6.9 cfs; 7/16, 4.0 cfs; 7/23, 2.2 cfs; 7/29, 2.2 cfs; 8/6, off; 8/12, 3.2 cfs; 8/21, 4.0 cfs; 8/28, 4.4 cfs; 9/3, 3.1 cfs; 9/10, 3.8 cfs.
1986: 5/20, 10 cfs (est); 7/7, 10.7 cfs; 7/15, 4.0 cfs; 7/22, 2.1 cfs; 7/29, 2.1 cfs; 8/5, 8/12, off; 8/19, 5.0 cfs; 8/26, off; 9/2, 6.1 cfs; 9/9, 9/16, 9/23, off; 9/30, 2 cfs (est).
1987: 5/9, 5.0 cfs (est); 6/16, 13.0 cfs; 6/20, 6.7 cfs; 6/23, 8.0 cfs; 7/6, 8.0 cfs; 7/13, 9.0 cfs; 7/21, 2.1 cfs; 7/28, 2.1 cfs; 8/4, 2.1 cfs; 8/6, 8/11, off; 9/1, 2.0 cfs (est); 9/8, off; 9/22, 5.0 cfs; 9/29, 1.0 cfs (est).
1990: 5/14, 4.3 cfs; 5/22, 8.9 cfs; 6/6, 13.5 cfs; 6/12, 11.0 cfs; 7/10, 8.1 cfs; 7/17, off; 8/7, 2.0 cfs; 8/14, 2.0 cfs; 9/7, 3.0 cfs; 10/1, 1.0 cfs (est).
1991: 6/25, 6.7 cfs; 7/2, 8.4 cfs; 7/9, 6.3 cfs; 7/16, 4.4 cfs (est); 7/23, 6 cfs; 7/30, 2.16 cfs; 8/6, 2.16 cfs; 8/13, 0 cfs; 8/20, 4 cfs; 8/27, 1 cfs; 9/3, 6 cfs; 9/4, 0 cfs.
1992: 5/6, 1.00 cfs; 5/8, 6.70 cfs; 5/14, 6.90 cfs; 5/15, 6.90 cfs; 5/19, 6.90 cfs; 5/21, 10.40 cfs; 5/20, 10.40 cfs; 5/26, 6.70 cfs; 6/2, 6/70 cfs; 6/9, 6.70 cfs; 6/16, 2.16 cfs; 6/18, 2.16 cfs; 6/18, 0.00 cfs; 6/23, 2.16 cfs; 6/30, 5.46 cfs; 7/7, 2.16 cfs; 7/14, 3.00 cfs; 7/21, 5.00 cfs; 8/11, 3.00 cfs; 8/18, 2.70 cfs; 9/16, 2.22 cfs; 9/22, 0.50 cfs.
1993: 5/17, 1.00 cfs; 5/21, 5.50 cfs; 5/29, 12.00 cfs; 5/31, 12.00 cfs; 6/8, 9.13 cfs; 6/16, 7.70 cfs; 6/22, 7.70 cfs; 6/26, 8.00 cfs; 7/2, 8.50 cfs; 7/5, 7.70 cfs; 7/8, 6.70 cfs; 7/13, 3.90 cfs; 7/15, 6.90 cfs; 7/20, 2.12 cfs; 7/27, 2.16 cfs; 7/30, 1.50 cfs; 8/3, 2.16 cfs; 8/10, 2.30 cfs; 8/24, 1.25 cfs; 9/7, 3.80 cfs; 9/14, 2.00 cfs; 9/17, 2.00 cfs; 9/21, 7.00 cfs; 10/1, 0.5 cfs (est).
1994: 4/28, 1.0 cfs (arrive), 0.0 cfs (depart); 5/13, 12.0 cfs (arrive), 0.0 cfs (depart); 5/16, 7.3 cfs; 5/17, 6.9 cfs; 5/24, 6.7 cfs; 6/1, 12.4 cfs; 6/3, 2.3 cfs; 6/7, 12.0 cfs; 6/10, 11.6 cfs; 6/14, 6.7 cfs; 6/17, 5.0 cfs; 6/21, 2.0 cfs; 6/28, 2.2 cfs; 7/1, 1.0 cfs; 7/5, 4.2 cfs; 7/13, 1.8 cfs; 7/28, 0.5 cfs; 8/13, 0.5 cfs; 8/16, 6.7 cfs; 8/18, 1.5 cfs; 8/23, 1.2 cfs; 8/25, 1.3 cfs; 8/27, 1.3 cfs; 8/30, 1.2 cfs; 9/5, 1.1 cfs (arrive), 0.0 cfs (depart); 9/10, 0.9 cfs.
1995: 5/2, 0.5 cfs (est); 5/15, 0.5 cfs; 5/17, 2.0 cfs; 5/19, 2.5 cfs; 5/22, 2.3 cfs; 5/30, 2.5 cfs; 6/1, 2.0 cfs; 6/6, 1.8 cfs; 6/13, 2.0 cfs; 6/24, 6.2 cfs; 6/30, 13.5 cfs; 7/7, 9.3 cfs; 7/15, 5.4 cfs; 7/22, 5.4 cfs; 7/26, 4.7 cfs; 8/1, 1.4 cfs; 8/8, 1.5 cfs; 8/15, 2.0 cfs; 8/18, 3.4 cfs; 8/22, 6.0 cfs; 8/29, 4.0 cfs; 9/5, 5.0 cfs; 9/5, 0.0 cfs; 9/19, 2.0 cfs; 10/3, 0.5 cfs; 10/30, 0.0 cfs.
1996: 5/11, 4.0 cfs (est); 7/2, 7.3 cfs (arrive), 0 cfs (depart); 7/12, 2 cfs; 7/16, 1.9 cfs (arrive), 2.1 cfs (depart); 7/23, 1.9 cfs (arrive), 2.1 cfs (depart); 7/30, 1.5 cfs (arrive), 2.0 cfs (depart); 8/6, 2.0 cfs; 8/13, 3.7 cfs (arrive), 0.5 cfs (depart); 8/20, 1.0 cfs (arrive), 7.0 cfs (depart); 8/27, 0.6 cfs (arrive), 0.4 cfs (depart); 9/2, 0.75 cfs (est); 9/3, 0.9 cfs (arrive), 5.4 cfs (depart); 9/17, 0.5 cfs (est); 9/24, 0.5 cfs (est).
1997: 5/26, 6.9 cfs; 6/25, 6.9 cfs; 6/26, 10.2 cfs; 6/28, 8.5 cfs (arrive), 6.7 cfs (depart); 7/1, 6.7 cfs; 7/8, 3.2 cfs (arrive), 2.0 cfs (depart); 7/11, 2.0 cfs; 7/15, 2.0 cfs; 7/16, 2.0 cfs; 7/22, 2.6 cfs (arrive), 2.1 cfs (depart); 7/29, 1.8 cfs (arrive), 4.0 cfs (depart); 8/4, 4.0 cfs; 8/5, 1.4 cfs (arrive), 2.1 cfs (depart); 8/12, 2.1 cfs; 8/14, 4.0 cfs; 8/19, 4.0 cfs; 8/20, 4.0 cfs; 8/26, 3.1 cfs; 9/2, 3.0 cfs (arrive), 0.0 cfs (depart); 9/9, 3.0 cfs (arrive), 0.0 cfs (depart); 9/16, 3.0 cfs (arrive), 9/16, 0.5 cfs (est) (depart); 9/23, 0.75 cfs (est); 9/30, 0.75 cfs (est).
1998: 6/8, 1 cfs; 7/7, 13.3 cfs; 7/21, 8.5 cfs (arrive), 6/7 (depart); 7/28, 5.4 cfs (arrive), 6.7 cfs (depart); 8/4, 5.4 cfs (arrive), 2.1 cfs (depart); 8/11, 2.1 cfs; 8/18, 1.9 cfs (arrive), 2.1 cfs (depart); 8/25, 2 cfs; 9/1, 2.1 cfs; 9/8, 2.2 cfs (arrive), 0.98 cfs (depart); 9/15, 0.97 cfs; 9/22, 2.9 cfs (arrive), 1 cfs (depart); 9/29, 1 cfs; 10/6, 1.0 cfs.

Supply: 1980, average; 1981, slightly below average; 1982, average; 1983, above average; 1984, above average; 1985, average; 1986, average; 1987, average; 1988, below average; 1989, below average; 1990, below average; 1991, slightly below average; 1992, below average; 1993, average; 1994, below average; 1995, slightly above average; 1996, average; 1997, average; 1998, slightly above average.

Source: State Engineer's Office, Annual Hydrographers' Reports.

**Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum**

Twin Butte Ditch, Black's Fork River

Diversion Description: Headgate also serves the Shurtliff and Early Ditch.¹

Diversion Location:

Source: Black's Fork River, Trib. Green River

Section, Township, Range: 24, 13, 117

Conveyance Description: Open Channel Canal, approximately 12 miles in length.¹

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|-----------------------------------|----------|------------|--------------------------|---|
| 11-30-1896 | 1375 | Domestic, Irrigation, Stock | 1,648.36 | 23.55 | 23.55 | |
| 11-30-1896 | 223E | Irrigation | 120.00 | 1.71 | 25.26 | |
| 03-15-1898 | 320E | Irrigation | 155.00 | 2.21 | 27.47 | |
| 03-15-1898 | 321E | Irrigation | 70.00 | 1.00 | 28.47 | |
| 03-15-1898 | 324E | Irrigation | 55.00 | 0.78 | 29.25 | |
| 02-19-1902 | 781E | Irrigation | 40.00 | 0.57 | 29.82 | |
| 12-14-1908 | 8855 | Domestic, Irrigation | 6.50 | 0.09 | 29.91 | POD/MOC change from a portion of Center Ditch. |

Storage Rights: None.

Estimated Canal Losses: Typical (10%).¹

Irrigation Practices: Lands are flood irrigated.¹

Crop Types / Consumptive Use: Lands are native grass hay and pasture.¹

Return Flows: Return flows are delivered to Black's Fork between Fort Bridger, Wyoming, and Rollins Draw.

Other Operational Information: This ditch is also commonly known as the Bigelow Ditch. Ditch is generally turned on in May and off in July.¹

Sources: 1) John Yarbrough, State Engineer's Office, Interview, May 4, 2000.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Twin Butte Ditch, Black's Fork River, Diversion Data

| Wateryear | May | | June | | July | | August | | September | |
|-----------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|
| | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) |
| 1980 | | | | | | | | | | |
| 1981 | | | | | | | | | | |
| 1982 | | | | | | | | | | |
| 1983 | | | | | | | | | | |
| 1984 | | | | | | | | | | |
| 1985 | 32.19 | 1,979.29 | 34.51 | 2,053.49 | 30.75 | 1,890.74 | 14.32 | 880.50 | 15.99 | 951.47 |
| 1986 | | | 33.83 | 2,013.02 | 33.39 | 2,053.07 | 12.16 | 747.69 | 13.75 | 818.18 |
| 1987 | 15.70 | 965.36 | 31.04 | 1,847.01 | 18.15 | 1,116.00 | 8.40 | 516.50 | 3.73 | 221.95 |
| 1988 | | | | | | | | | | |
| 1989 | | | | | | | | | | |
| 1990 | 13.96 | 858.37 | 34.45 | 2,049.92 | 19.92 | 1,224.83 | 7.67 | 471.61 | 8.00 | 476.03 |
| 1991 | | | | | 16.23 | 997.94 | 7.89 | 485.14 | 4.19 | 249.32 |
| 1992 | 25.62 | 1,575.31 | 34.91 | 2,077.29 | 20.18 | 1,240.82 | 8.93 | 549.08 | 3.67 | 218.38 |
| 1993 | 6.85 | 421.19 | 23.80 | 1,416.20 | 30.86 | 1,897.51 | 16.13 | 991.80 | 11.07 | 658.71 |
| 1994 | 21.64 | 1,330.59 | 32.27 | 1,920.20 | 15.25 | 937.69 | 3.32 | 204.14 | 1.91 | 113.65 |
| 1995 | | | | | | | | | | |
| 1996 | | | | | | | | | | |
| 1997 | | | 28.93 | 1,721.45 | 20.48 | 1,259.27 | 6.58 | 404.59 | 14.42 | 858.05 |
| 1998 | | | 22.83 | 1,358.48 | 28.93 | 1,778.84 | 10.84 | 666.53 | 12.10 | 720.00 |

| | | | | | | | | | | |
|-----------|-------|----------|-------|----------|-------|----------|------|--------|------|--------|
| Averages: | 19.33 | 1,188.35 | 30.73 | 1,828.56 | 23.41 | 1,439.67 | 9.62 | 591.76 | 8.88 | 528.58 |
|-----------|-------|----------|-------|----------|-------|----------|------|--------|------|--------|

Blank cells are due to missing/insufficient data.

Average = Average Flow for ENTIRE month. Monthly Total = Total Volume used during month.

See Methodology section for explanations.

Spot data readings used in calculating averages in table on following pages.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Twin Butte Ditch, Black's Fork River, Diversion Data

Data:

1985: 5/7, 34.6 cfs; 5/27, 45.8 cfs; 6/2, 29.0 cfs; 6/4, 34.1 cfs; 6/6, 36.2 cfs; 6/14, 36.2 cfs; 6/22, 29.5 cfs; 6/25, 40.1 cfs; 7/2, 30.0 cfs; 7/10, 32.0 cfs; 7/17, 35.1 cfs; 7/24, 29.5 cfs; 7/30, 26.1 cfs; 8/7, 5 cfs (est); 8/15, 10 cfs (est) (arrive), 3 cfs (est) (depart); 8/19, 22.4 cfs (arrive), 3 cfs (est) (depart); 8/22, 8.2 cfs; 8/29, 34.6 cfs; 9/4, 15 cfs (est); 9/11, 16.5 cfs; 9/18, 13.4 cfs; 9/25, 18.0 cfs; 10/9, 8 cfs (est).

1986: 5/20, 30 cfs (est); 7/7, 36.8 cfs; 7/16, 36.8 cfs; 7/23, 30.0 cfs; 7/30, 28.0 cfs; 8/6, 2.8 cfs (est); 8/13, 13.0 cfs; 8/20, 14.1 cfs; 8/27, 13.7 cfs; 9/3, 14.9 cfs; 9/10, 23.3 cfs; 9/17, 14.9 cfs; 9/24, 7.9 cfs; 9/30, 4 cfs (est).

1987: 5/11, 30.0 cfs; 5/24, 20.0 cfs; 5/30, 20.0 cfs; 6/16, 34.0 cfs; 6/20, 34.0 cfs; 6/24, 34.0 cfs; 6/30, 35.0 cfs; 7/7, 34.0 cfs; 7/14, 26.0 cfs; 7/22, 3.0 cfs; 7/29, 3.0 cfs; 8/5, 3.0 cfs; 8/14, 14.0 cfs; 8/18, 11.0 cfs; 8/26, 7.8 cfs; 9/2, 7.8 cfs; 9/8, 15.8 cfs; 9/16, 13.8 cfs; 9/23, 26.0 cfs; 9/29, 6.0 cfs (est).

1990: 5/15, 12.0 cfs; 5/19, 7.0 cfs; 5/22, 34.0 cfs; 5/25, 30.0 cfs; 5/26, 34.0 cfs; 5/30, 34.5 cfs; 6/6, 32.0 cfs; 6/13, 41.2 cfs; 6/20, 30.0 cfs; 6/27, 34.5 cfs; 6/30, 34.5 cfs; 7/4, 34.5 cfs; 7/11, 29.0 cfs; 7/18, 20.0 cfs; 7/25, 2.8 cfs (est); 8/1, 8.8 cfs; 8/8, 5.8 cfs; 8/15, 2.8 cfs (est); 8/29, 13.8 cfs; 9/5, 12.0 cfs; 9/12, 8.8 cfs; 9/18, 5.8 cfs; 9/26, 5.8 cfs; 10/1, 5.0 cfs (est).

1991: 6/26, 34 cfs; 6/28, 34 cfs; 7/3, 33 cfs; 7/10, 29 cfs; 7/17, 7 cfs (est); 7/24, 6.8 cfs; 7/31, 4.8 cfs; 8/1, 4.8 cfs; 8/7, 7.8 cfs; 8/14, 5.8 cfs; 8/21, 9 cfs; 8/28, 9.8 cfs; 9/4, 11.8 cfs; 9/11, 5.8 cfs; 9/18, 2.8 cfs (est).

1992: 5/6, 4.00 cfs; 5/9, 17.00 cfs; 5/10, 30.00 cfs; 5/15, 34.00 cfs; 5/19, 34.00 cfs; 5/21, 34.00 cfs; 5/24, 34.00 cfs; 5/26, 34.00 cfs; 6/2, 34.50 cfs; 6/10, 37.50 cfs; 6/17, 40.00 cfs; 6/19, 34.00 cfs; 6/24, 31.00 cfs; 7/1, 31.00 cfs; 7/8, 24.80 cfs; 7/15, 21.80 cfs; 7/22, 16.80 cfs; 7/24, 16.80 cfs; 8/5, 3.30 cfs (est); 8/12, 10.80 cfs; 8/19, 8.70 cfs; 8/26, 11.00 cfs; 9/2, 11.80 cfs; 9/9, 2.80 cfs (est); 9/17, 4.00 cfs; 9/22, 4.00 cfs.

1993: 5/17, 30.00 cfs; 5/18, 18.00 cfs; 6/1, 8.90 cfs; 6/9, 8.80 cfs; 6/16, 29.00 cfs; 6/23, 34.60 cfs; 6/25, 35.00 cfs; 7/2, 38.40 cfs; 7/6, 39.00 cfs; 7/9, 34.50 cfs; 7/14, 12.00 cfs; 7/15, 12.00 cfs; 7/21, 33.60 cfs; 7/24, 46.00 cfs; 7/28, 29.00 cfs; 8/4, 31.50 cfs; 8/11, 32.00 cfs; 8/18, 4.20 cfs; 8/25, 3.80 cfs; 9/1, 4.80 cfs; 9/8, 6.00 cfs; 9/9, 10.50 cfs; 9/10, 13.00 cfs; 9/15, 16.80 cfs; 9/22, 14.80 cfs; 10/1, 5.00 cfs (est).

1994: 4/29, 3.0 cfs; 5/17, 20.0 cfs; 5/26, 36.8 cfs; 6/4, 34.5 cfs; 6/8, 35.5 cfs; 6/11, 34.5 cfs; 6/15, 35.5 cfs; 6/18, 32.5 cfs; 6/21, 34.5 cfs; 6/29, 23.0 cfs; 7/2, 23.0 cfs; 7/6, 18.0 cfs; 7/14, 22.4 cfs (arrive), 18.0 cfs (depart); 7/31, 6.0 cfs (arrive), 4.6 cfs (depart); 8/3, 4.0 cfs; 8/10, 3.5 cfs; 8/13, 4.0 cfs; 8/17, 4.0 cfs; 8/24, 4.5 cfs; 8/31, 9/7, 0.0 cfs; 9/14, 4.0 cfs; 9/16, 3.3 cfs; 9/21, 2.3 cfs; 9/28, 4.0 cfs.

1997: 5/19, 29.0 cfs; 5/26, 39.0 cfs; 6/26, 25.0 cfs; 6/29, 14.0 cfs; 7/2, 36.7 cfs; 7/9, 28.0 cfs; 7/11, 34.6 cfs (arrive), 32.5 cfs (depart); 7/16, 10.8 cfs (arrive), 15.0 cfs (depart); 7/20, 12.6 cfs (arrive), 18.3 cfs (depart); 7/23, 15.8 cfs (arrive), 17.7 cfs (depart); 7/27, 19.2 cfs (arrive), 15.1 cfs (depart); 7/30, 0.0 cfs; 8/5, 6.0 cfs; 8/8, 6.2 cfs (arrive), 5.7 cfs (depart); 8/13, 5.4 cfs (arrive), 8.6 cfs (depart); 8/21, 6.0 cfs; 8/29, 5.3 cfs (arrive), 14.1 cfs (depart); 8/30, 11.5 cfs; 9/3, 16.8 cfs; 9/10, 18.0 cfs (arrive), 21.0 cfs (depart); 9/17, 14.8 cfs (arrive), 13.3 cfs (depart); 9/24, 11.9 cfs; 9/30, 10.2 cfs.

1998: 6/8, 27 cfs (arrive), 31.5 cfs (depart); 7/8, 27 cfs (arrive), 29 cfs (depart); 7/14, 33 cfs; 7/22, 17.8 cfs (arrive), 18.9 cfs (depart); 7/29, 40 cfs; 8/5, 22.4 cfs (arrive), 10.9 cfs (depart); 8/12, 4.9 cfs (arrive), 8.2 cfs (depart); 8/19, 3 cfs (est) (arrive), 6.2 cfs (depart); 8/21, 3 cfs (est) (arrive), 12.2 cfs (depart); 8/26, 8 cfs (arrive), 11.5 cfs (depart); 8/29, 10.5 cfs (arrive), 1.5 cfs (depart); 9/2, 9.8 cfs (arrive), 13.7 cfs (depart); 9/7, 10.5 cfs (arrive), 16 cfs (depart); 9/9, 16.4 cfs; 9/16, 7.3 cfs (arrive), 10.2 cfs (depart); 9/23, 12.6 cfs; 9/30, 10.5 cfs (arrive), 16.4 cfs (depart); 10/6, 10.9 cfs (arrive), 5.9 cfs (depart).

Supply: 1980, average; 1981, slightly below average; 1982, average; 1983, above average; 1984, above average; 1985, average; 1986, average; 1987, average; 1988, below average; 1989, below average; 1990, below average; 1991, slightly below average; 1992, below average; 1993, average; 1994, below average; 1995, slightly above average; 1996, average; 1997, average; 1998, slightly above average.

Source: State Engineer's Office, Annual Hydrographers' Reports.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Uinta Number 3 Ditch, Black's Fork River

Diversion Description: Diversion consists of a single 36" Waterman slide gate.¹

Diversion Location:

Source: Black's Fork River, Trib. Green River
Section, Township, Range: 5, 15, 115

Conveyance Description: Open Channel Canal, approximately 25 miles in length.¹

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|-----------------------------------|----------|------------|--------------------------|---|
| 10-29-1909 | 9501 | Domestic, Irrigation, Stock | 4,000.03 | 57.10 | 57.10 | |
| 04-02-1947 | 5429E | Res. Supply | | | 57.10 | Supply for the Wall Development Company Reservoir. |
| 07-25-1988 | 6927E | Stock, Res. Supply | | 0.03 | 57.13 | Also supplies the Triangle Stock Reservoir. |

Storage Rights: None.

Estimated Canal Losses: Greater than typical (20-25%).¹

Irrigation Practices: Approximately 100 acres are irrigated by 3 sprinkler lines; remaining lands are flood irrigated.¹

Crop Types / Consumptive Use: Approximately 100 acres are alfalfa hay; remaining lands are native grass hay and pasture.¹

Return Flows: Approximately 40% of the return flows are delivered to Black's Fork above Rollins Draw, 35% to Austin Wash, and 25% to Black's Fork below Rollins Draw.

Other Operational Information: This ditch is also commonly known as the Austin Ditch. Ditch is generally turned on in May and off in July.¹

Sources: 1) John Yarbrough, State Engineer's Office, Interview, May 4, 2000.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Uinta Number 3 Ditch, Black's Fork River, Diversion Data

| Water year | May | | June | | July | | August | | September | |
|------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|
| | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) |
| 1971 | | | | | | | 6.50 | 399.67 | 6.50 | 386.78 |
| 1981 | | | | | | | | | | |
| 1982 | | | | | | | | | | |
| 1983 | | | | | | | | | | |
| 1984 | | | | | | | | | | |
| 1985 | 43.60 | 2,680.86 | 26.73 | 1,590.55 | 15.19 | 934.00 | 9.99 | 614.26 | 3.70 | 220.17 |
| 1986 | | | 42.64 | 2,537.26 | 21.06 | 1,294.93 | 14.74 | 906.33 | 7.47 | 444.50 |
| 1987 | 33.28 | 2,046.31 | 34.35 | 2,043.97 | 27.86 | 1,713.04 | 12.05 | 740.93 | 7.12 | 423.67 |
| 1988 | | | | | | | | | | |
| 1989 | | | | | | | | | | |
| 1990 | 2.14 | 131.58 | 50.39 | 2,998.41 | 16.05 | 986.88 | 3.89 | 239.19 | 4.58 | 272.53 |
| 1991 | | | | | | | | | | |
| 1992 | 19.13 | 1,176.26 | 14.40 | 856.86 | 8.08 | 496.82 | 6.34 | 389.83 | 2.47 | 146.98 |
| 1993 | 22.94 | 1,410.53 | 60.83 | 3,619.64 | 25.34 | 1,558.10 | 18.83 | 1,157.81 | 7.38 | 439.14 |
| 1994 | 11.50 | 707.11 | 16.07 | 956.23 | 5.15 | 316.66 | 4.20 | 258.25 | 1.71 | 101.75 |
| 1995 | 9.61 | 590.90 | 63.93 | 3,804.10 | 63.55 | 3,907.54 | 24.78 | 1,523.66 | 11.93 | 709.88 |
| 1996 | 37.39 | 2,299.02 | 43.72 | 2,601.52 | 15.89 | 977.04 | 11.38 | 699.73 | 7.60 | 452.23 |
| 1997 | | | | | 11.47 | 705.26 | 12.78 | 785.81 | 5.90 | 351.07 |
| 1998 | | | 43.72 | 2,601.52 | 15.89 | 977.04 | 11.38 | 699.73 | 7.60 | 452.23 |

| | | | | | | | | | | |
|-----------|-------|----------|-------|----------|-------|----------|-------|--------|------|--------|
| Averages: | 22.45 | 1,380.32 | 39.68 | 2,361.00 | 20.50 | 1,260.66 | 11.41 | 701.27 | 6.16 | 366.74 |
|-----------|-------|----------|-------|----------|-------|----------|-------|--------|------|--------|

Data in italics from USGS gaging station 006220.00, see attached data sheets.

Blank cells are due to missing/insufficient data.

Average = Average Flow for ENTIRE month. Monthly Total = Total Volume used during month.

See Methodology section for explanations.

Spot data readings used in calculating averages in table on following pages.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Uinta Number 3 Ditch, Black's Fork River, Diversion Data

Data:

1985: 5/7, 60 cfs; 5/25, 42.6 cfs; 5/27, 50.2 cfs; 5/29, 80.2 cfs; 6/4, 32.6 cfs; 6/7, 43.7 cfs; (all est): 6/25, 9 cfs; 7/2, 19 cfs; 7/10, 19 cfs; 7/17, 10 cfs; 7/24, 14 cfs; 7/30, 15 cfs; 8/7, 8 cfs; 8/13, 10 cfs; 8/22, 9 cfs; 8/29, 12 cfs; 9/4, 8 cfs; 9/7, 11 cfs; 9/8, 8 cfs; 9/11, 4 cfs; 9/18, 4 cfs.

1986 (all est): 5/20, 40 cfs; 5/24, 60 cfs; 7/16, 20 cfs; 7/23, 20 cfs; 7/30, 10 cfs; 8/6, 20 cfs; 8/13, 22 cfs; 8/20, 11 cfs; 8/27, 9 cfs; 9/3, 9 cfs; 9/10, 6 cfs; 9/17, 4 cfs; 9/24, 15 cfs; 9/30, 5 cfs.

1987: 5/7, 20.0 cfs; 5/11, 50.0 cfs; 5/20, 40.0 cfs; 6/16, 42.5 cfs; 6/20, 31.0 cfs; 6/24, 7.0 cfs; 6/30, 40.0 cfs; 7/7, 33.0 cfs; 7/14, 25.0 cfs; 7/22, 25.0 cfs; 7/29, 24.0 cfs; 8/5, 26.0 cfs; 8/12, 7.0 cfs (est); 8/19, 11.5 cfs (est); 8/26, 4.0 cfs (est); 9/2, 9.2 cfs; 9/9, 8.0 cfs; 9/16, 8.0 cfs; 9/23, 7.0 cfs (est); 9/29, 5.0 cfs.

1990: 5/17, 2.0 cfs (est); 5/22, 3.5 cfs (est); 5/25, 10.0 cfs; 5/26, 7.0 cfs; 5/30, 1.0 cfs; 6/6, 21.0 cfs; 6/7, 54.0 cfs; 6/13, 71.7 cfs; 6/20, 72.0 cfs; 6/23, 58.0 cfs; 6/27, 48.0 cfs; 6/30, 18.0 cfs; 7/4, 24.0 cfs; 7/11, 25.0 cfs; 7/18, 13.0 cfs; 7/25, 9.0 cfs; 8/1, 5.5 cfs; 8/8, 6.0 cfs; 8/9, 4.8 cfs; 8/13, 5.2 cfs (est); 8/15, 6.0 cfs (est); 8/22, 1.5 cfs (est); 8/29, 1.5 cfs (est); 9/5, 5.5 cfs; 9/12, 2.0 cfs; 9/18, 6.0 cfs; 9/26, 5.5 cfs (est); 10/1, 4.0 cfs.

1992: 5/9, 4.00 cfs; 5/14, 8.00 cfs; 5/19, 8.00 cfs; 5/21, 51.00 cfs; 5/24, 51.00 cfs; 5/26, 50.00 cfs; 6/2, 8.00 cfs; 6/10, 17.50 cfs; 6/17, 17.50 cfs; 6/19, 17.50 cfs; 6/24, 13.50 cfs; 7/1, 10.50 cfs; 7/8, 5.00 cfs; 7/15, 10.50 cfs; 7/22, 8.50 cfs; 7/24, 5.95 cfs; 8/5, 11.00 cfs; 8/12, 9.50 cfs; 8/19, 5.50 cfs; 8/26, 1.00 cfs (est); 9/7, 3.00 cfs; 9/9, 4.00 cfs; 9/17, 4.00 cfs; 9/22, 4.00 cfs.

1993: 5/17, 25.00 cfs; 5/26, 57.00 cfs; 6/9, 57.00 cfs; 6/16, 55.00 cfs; 6/22, 70.00 cfs; 6/25, 64.30 cfs; 7/2, 70.00 cfs; 7/5, 59.40 cfs; 7/9, 16.50 cfs; 7/14, 0.00 cfs; 7/21, 12.70 cfs; 7/28, 32.00 cfs; 8/10, 32.00 cfs; 8/11, 32.50 cfs; 8/18, 8.50 cfs; 8/25, 10.50 cfs; 9/8, 4.08 cfs; 9/15, 3.00 cfs (est); 9/22, 16.00 cfs; 10/1, 6.00 cfs.

1994: 5/17, 7.0 cfs; 5/24, 22.7 cfs; 5/26, 40.0 cfs; 6/4, 15.0 cfs; 6/8, 30.0 cfs; 6/11, 23.0 cfs; 6/15, 16.0 cfs; 6/18, 17.0 cfs; 6/21, 8.5 cfs; 6/29, 9.3 cfs; 7/2, 8.7 cfs; 7/6, 2.5 cfs; 7/14, 8.0 cfs; 7/20, 1.5 cfs; 7/27, 6.0 cfs; 7/30, 6.5 cfs; 8/3, 6.7 cfs; 8/10, 6.2 cfs; 8/13, 6.7 cfs (arrive), 5.2 cfs (depart); 8/17, 3.0 cfs; 8/24, 2.0 cfs; 8/31, 3.0 cfs (arrive), 1.0 cfs (depart); 9/2, 1.5 cfs; 9/14, 1.5 cfs; 9/21, 2.5 cfs; 9/27, 3.5 cfs.

1995: 5/15, 6.0 cfs; 5/17, 9.0 cfs; 5/19, 13.0 cfs; 5/23, 18.0 cfs; 5/25, 30.0 cfs; 5/26, 25.0 cfs; 5/30, 18.0 cfs; 6/2, 20.0 cfs; 6/4, 60.0 cfs; 6/6, 67.3 cfs; 6/13, 63.0 cfs; 6/24, 76.0 cfs; 6/30, 60.0 cfs; 7/4, 80.0 cfs; 7/7, 61.0 cfs; 7/14, 72.0 cfs; 7/22, 68.0 cfs; 7/31, 38.0 cfs; 8/2, 40.5 cfs; 8/9, 29.5 cfs; 8/16, 17.3 cfs; 8/19, 20.0 cfs; 8/23, 20.0 cfs; 8/26, 21.0 cfs; 8/30, 21.0 cfs; 9/6, 7.0 cfs; 9/13, 11.7 cfs; 9/21, 12.4 cfs; 9/27, 15.3 cfs; 10/3, 9.0 cfs.

1996: 5/9, 20.0 cfs (est); 5/13, 40.0 cfs (est); 5/17, 60.0 cfs (est); 7/3, 34.5 cfs (arrive), 15.8 cfs (depart); 7/13, 14 cfs (arrive), 17.5 cfs (depart); 7/19, 15.8 cfs; 7/24, 18.0 cfs (arrive), 14.4 cfs (depart); 7/29, 15.8 cfs (arrive), 18.0 cfs (depart); 7/30, 2.7 cfs (arrive), 0 cfs (depart); 8/7, 12.4 cfs (arrive), 14.4 cfs (depart); 8/14, 12.4 cfs (arrive), 12.0 cfs (depart); 8/21, 10.8 cfs; 8/24, 15.0 cfs (est); 8/28, 10.3 cfs; 8/31, 10.8 cfs (arrive), 13.0 cfs (depart); 9/4, 2.0 cfs (est); 9/18, 14.4 cfs; 9/25, 12.7 cfs (arrive), 14.0 cfs (depart).

1997: 6/26, 55.3 cfs; 6/29, 10.0 cfs (est); 7/2, 12.0 cfs; 7/9, 10.8 cfs; 7/30, 12.0 cfs; 8/4, 13.7 cfs (arrive), 17.3 cfs (depart); 8/5, 17.0 cfs (arrive), 9.5 cfs (depart); 8/13, 18.8 cfs (arrive), 15.1 cfs (depart); 8/21, 11.0 cfs (arrive), 7.7 cfs (depart); 8/29, 7.3 cfs; 8/30, 9.5 cfs (arrive), 5.5 cfs (depart); 9/3, 4.0 cfs (arrive), 2.5 cfs (est) (depart); 9/10, 1.0 cfs (est) (arrive), 2.5 cfs (est) (depart); 9/17, 1.0 cfs (est) (arrive), 6.5 cfs (depart); 9/24, 6.5 cfs (arrive), 20.0 cfs (depart); 9/30, 12.7 cfs.

1998: 6/8, 59 cfs; 7/8, 62 cfs; 7/14, 45 cfs; 7/22, 38 cfs (arrive), 27 cfs (depart); 7/29, 30 cfs (arrive), 45 cfs (depart); 8/5, 38 cfs; 8/12, 30 cfs (arrive), 27.1 cfs (depart); 8/19, 29 cfs; 8/26, 28 cfs (arrive), 23.6 cfs (depart); 9/2, 19 cfs (arrive), 6.5 cfs (depart); 9/9, 6.7 cfs (arrive), 11.4 cfs (depart); 9/16, 10.1 cfs (arrive), 5.2 cfs (depart); 9/23, 8.7 cfs (arrive), 9.8 cfs (depart); 9/30, 9.23 cfs; 10/6, 6.0 cfs.

Supply: 1980, average; 1981, slightly below average; 1982, average; 1983, above average; 1984, above average; 1985, average; 1986, average; 1987, average; 1988, below average; 1989, below average; 1990, below average; 1991, slightly below average; 1992, below average; 1993, average; 1994, below average; 1995, slightly above average; 1996, average; 1997, average; 1998, slightly above average.

Source: State Engineer's Office, Annual Hydrographers' Reports.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Uinta Number 3 Ditch, Black's Fork River, Diversion Data

UNITA #3 CANAL.

STATION NO. 006220.00

LATITUDE 0-00-00 LONGITUDE 0-00-00

SECTION 0 TOWNSHIP 0 , RANGE 0 P.M.

ELEVATION UNKNOWN DRAINAGE AREA UNKNOWN

NONCONTRIBUTING AREA UNKNOWN BASIN UNKNOWN

DATA FROM WATER COMMISSIONERS

(P)

| MEAN DAILY FLOW IN CFS BY WATER YEAR | | | | | | | | | | | | | |
|--------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|---------|--------|-----|
| 1971 | | | | | | | | | | | | | |
| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEPT | DAY |
| 1 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 1 |
| 2 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 2 |
| 3 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 3 |
| 4 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 4 |
| 5 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 5 |
| 6 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6 |
| 7 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 7 |
| 8 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 8 |
| 9 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 9 |
| 10 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 10 |
| 11 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 11 |
| 12 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 12 |
| 13 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 13 |
| 14 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 14 |
| 15 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 15 |
| 16 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 16 |
| 17 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6.50 | 17 |
| 18 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6.50 | 18 |
| 19 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6.50 | 19 |
| 20 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6.50 | 20 |
| 21 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6.50 | 21 |
| 22 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6.50 | 22 |
| 23 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6.50 | 23 |
| 24 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6.50 | 24 |
| 25 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6.50 | 25 |
| 26 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6.50 | 26 |
| 27 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6.50 | 27 |
| 28 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6.50 | 28 |
| 29 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6.50 | 29 |
| 30 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6.50 | 30 |
| 31 | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50 | 6.50 | 31 |
| TOTAL | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 97.50* | 195.00 | |
| MEAN | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 6.50* | 6.50 | |
| AC-FT | ** | ** | ** | ** | ** | ** | ** | ** | ** | ** | 193.39* | 386.78 | |

** INDICATES
MISSING DATA

* INDICATES
COMPUTED FROM
INCOMPLETE DATA

E INDICATES
ESTIMATED VALUE

Source: Wyoming Water Resources Data System, March 20, 2000.

**Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum**

Utah-Wyoming Number 2 Ditch, Black's Fork River

Diversion Description: Diversion consists of a single 3' by 4' slide gate mounted on a metal frame attached to a short section of culvert.¹

Diversion Location:

Source: Black's Fork River, Trib. Green River

Section, Township, Range: 24, 13, 117

Conveyance Description: Open Channel Canal, approximately 50 miles in length.¹

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|----------------------|--------|------------|--------------------------|---|
| 10-13-1905 | 6976 | Irrigation, Stock | 927.95 | 13.26 | 13.26 | |
| 08-07-1985 | 6798E | Res. Supply | | | 13.26 | Supply Ditch for Bigelow No. 1 through 6 Stock Reservoirs. |

Storage Rights: None.

Estimated Canal Losses: Less than typical losses (5%) are experienced in the upper reaches of the ditch, however, almost 100% loss is experienced near the end of the ditch.¹

Irrigation Practices: Lands are flood irrigated.¹

Crop Types / Consumptive Use: Lands are pasture.¹

Return Flows: Return flows are delivered to Spring Creek.

Other Operational Information: This ditch is also commonly known as the Bigelow ditch. The ditch is typically turned on during the last week of April. Due to its low priority, it is one of the first ditches to be regulated. Ditch is generally turned on in May and off in July.¹

Sources: 1) John Yarbrough, State Engineer's Office, Interview, May 4, 2000.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Utah-Wyoming Number 2 Ditch, Black's Fork River, Diversion Data

| Wateryear | May | | June | | July | | August | | September | |
|-----------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|
| | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) |
| 1980 | | | | | | | | | | |
| 1981 | | | | | | | | | | |
| 1982 | | | | | | | | | | |
| 1983 | | | | | | | | | | |
| 1984 | | | | | | | | | | |
| 1985 | 6.65 | 408.89 | 6.22 | 370.12 | 2.00 | 122.98 | 1.74 | 106.99 | 0.77 | 45.82 |
| 1986 | | | 2.11 | 125.55 | 2.51 | 154.33 | 2.00 | 122.98 | 2.00 | 119.01 |
| 1987 | 9.42 | 579.21 | 7.87 | 468.30 | 3.07 | 188.77 | 1.00 | 61.49 | 0.88 | 52.36 |
| 1988 | | | | | | | | | | |
| 1989 | | | | | | | | | | |
| 1990 | | | 8.83 | 525.42 | 3.45 | 212.13 | | | | |
| 1991 | | | | | 1.55 | 95.31 | | | | |
| 1992 | 5.72 | 351.71 | 2.70 | 160.66 | 4.30 | 264.40 | | | | |
| 1993 | | | 12.59 | 749.16 | 6.10 | 375.07 | 0.63 | 38.74 | 1.21 | 72.00 |
| 1994 | 10.54 | 648.08 | 4.69 | 279.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1995 | | | | | | | | | | |
| 1996 | | | | | | | | | | |
| 1997 | 4.02 | 247.18 | 7.08 | 421.29 | 1.49 | 91.62 | | | | |
| 1998 | | | 3.86 | 229.69 | 6.86 | 421.80 | 3.54 | 217.67 | 0.00 | 0.00 |
| Averages: | 7.27 | 447.01 | 6.22 | 369.92 | 3.13 | 192.64 | 1.49 | 91.31 | 0.81 | 48.20 |

Blank cells are due to missing/insufficient data.

Average = Average Flow for ENTIRE month. Monthly Total = Total Volume used during month.

See Methodology section for explanations.

Spot data readings used in calculating averages in table on following pages.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

Utah-Wyoming Number 2 Ditch, Black's Fork River, Diversion Data

Data:

1985: 5/9, 1.4 cfs; 5/25, 13.0 cfs; 6/4, 13.0 cfs; 6/21, 2.0 cfs; 6/24, 2.0 cfs; 7/1, 2.0 cfs; 7/9, 2.0 cfs; 7/16, 2.0 cfs; 7/23, 2.0 cfs; 7/29, 2.0 cfs; 8/6, 2.0 cfs; 8/12, 3.0 cfs (est); 8/21, 1.0 cfs (est); 8/28, 1.0 cfs (est); 9/3, 1.0 cfs (est); 9/10, 1.0 cfs (est); 9/24, 1.0 cfs (est).

1986: 5/20, 2 cfs (est); 7/7, 2.2 cfs; 7/15, 2.0 cfs; 7/22, 4.0 cfs; 7/29, 2.0 cfs; 8/5, 2.0 cfs; 8/12, 2.0 cfs; 8/19, 2.0 cfs; 8/26, 2.0 cfs; 9/2, 2.0 cfs; 9/9, 2.0 cfs; 9/16, 2.0 cfs; 9/23, 2.0 cfs; 9/30, 2 cfs (est).

1987: 5/9, 13.0 cfs (est); 6/16, 12.0 cfs; 6/20, off; 6/23, 3.0 cfs; 6/29, 3.0 cfs; 7/6, 5.0 cfs; 7/13, 5.0 cfs; 7/21, 1.5 cfs; 7/28, 1.0 cfs; 8/4, 1.0 cfs; 8/11, 1.0 cfs; 8/18, 1.0 cfs; 8/25, 1.0 cfs; 9/1, 1.0 cfs; 9/8, 1.0 cfs; 9/15, 1.0 cfs; 9/22, 1.0 cfs; 9/29, 0.5 cfs (est).

1990: 5/24, 6.5 cfs; 5/26, 0 cfs; 5/29, 0 cfs; 6/6, 10.0 cfs; 6/12, 11.3 cfs; 6/19, 8.8 cfs; 6/26, 13.0 cfs; 6/29, 0 cfs; 7/17, 5.25 cfs; 7/24, 6.0 cfs; 7/31, 0 cfs.

1991: 6/21, 2.5 cfs; 6/25, 0 cfs; 6/27, 6.0 cfs; 7/2, 6.0 cfs; 7/3, 3.7 cfs; 7/16, 0 cfs.

1992: 5/6, 0.00 cfs; 5/8, 0.00 cfs; 5/21, 13.00 cfs; 5/24, 10.60 cfs; 5/26, 10.60 cfs; 6/2, 0.00 cfs; 7/14, 8.00 cfs; 7/21, 5.00 cfs.

1993: 5/31, 12.00 cfs; 6/16, 13.00 cfs; 6/19, 12.00 cfs; 7/2, 13.50 cfs; 7/5, 11.00 cfs; 7/8, 11.00 cfs; 7/13, 6.00 cfs; 7/20, 6.00 cfs; 7/27, 0.00 cfs; 9/14, 1.50 cfs; 9/21, 1.50 cfs; 10/1, 0.50 cfs.

1994: 4/25, 0.0 cfs (arrive), 8.5 cfs (depart); 4/28, 12.0 cfs (arrive), 9.0 cfs (depart); 4/29, 9.0 cfs; 5/16, 7.7 cfs (arrive); 12.3 cfs (depart); 5/23, 12.9 cfs; 6/1, 12.5 cfs; 6/6, 6.0 cfs; 6/10, 6.0 cfs; 6/14, 6.0 cfs; 6/17, 6.0 cfs; 6/21, 3.0 cfs; 6/28, 7/1, 7/5, 7/12, 8/9, 8/13, 8/23, 9/6, 9/10, 9/16, 9/20, 9/27, 0.0 cfs.

1996: 9/24, 0 cfs.

1997: 5/3, 3.0 cfs; 5/26, 5.0 cfs (est); 6/25, 9.3 cfs; 6/26, 9.3 cfs; 6/28, 3.0 cfs; 7/1, 3.0 cfs; 7/8, 3.0 cfs; 7/8, 4.7 cfs (arrive), 5.2 cfs (depart); 7/12, 2.3 cfs (arrive), 4.0 cfs (depart); 7/15, 2.7 cfs (arrive), 0.0 cfs (depart); 7/22, 7/29, 8/5, 8/12, 8/19, 8/26, 9/2, 9/9, 9/16, 9/23, 0.0 cfs; 9/30, 0.0 cfs (arrive), 1.5 cfs (depart).

1998: 6/8, 6.2 cfs (arrive), 6.8 cfs (depart); 6/25, 3.5 cfs; 7/6, 8 cfs (arrive), 10 cfs (depart); 7/21, 6.2 cfs (arrive), 5 cfs (depart); 7/28, 5.2 cfs (arrive), 6.11 cfs (depart); 8/4, 2.6 cfs; 8/7, 3.7 cfs; 8/10, 9.2 cfs; 8/11, 8.6 cfs (arrive), 5 cfs (depart); 8/18, 3.8 cfs; 8/25, 5.1 cfs (arrive), 0 cfs (depart); 9/1, 9/8, 9/15, 9/22, 9/29, 10/6, 0 cfs.

Supply: 1980, average; 1981, slightly below average; 1982, average; 1983, above average; 1984, above average; 1985, average; 1986, average; 1987, average; 1988, below average; 1989, below average; 1990, below average; 1991, slightly below average; 1992, below average; 1993, average; 1994, below average; 1995, slightly above average; 1996, average; 1997, average; 1998, slightly above average.

Source: State Engineer's Office, Annual Hydrographers' Reports.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

White, Mansfield, and Robbins Ditch, Black's Fork River

Diversion Description: Diversion consists of a single 24" diameter Waterman slide gate.¹

Diversion Location:

Source: Black's Fork River, Trib. Green River

Section, Township, Range: 24, 14, 116

Conveyance Description: Open Channel Canal, approximately 4 miles in length.¹

Wyoming Water Rights Summary:

| Priority Date (M-D-Y) | Permit Number | Permitted Use | Acres | Flow (cfs) | Cumulative Flow (cfs) | Comments |
|--------------------------|------------------|-----------------------------------|--------|------------|--------------------------|---|
| 11-19-1892 | 366 | Domestic, Irrigation, Stock | 358.00 | 5.19 | 5.19 | |
| 03-03-1914 | 12811 | Domestic, Irrigation | 96.00 | 1.37 | 6.56 | POD/MOC change from a portion of Demander Ditch. |
| 03-19-1935 | 5055E | Irrigation | 203.00 | 2.90 | 9.46 | |
| 04-25-1940 | 5244E | Irrigation | 373.00 | 5.32 | 14.78 | |

Storage Rights: None.

Estimated Canal Losses: Typical (10%).¹

Irrigation Practices: Lands are entirely flood irrigated.¹

Crop Types / Consumptive Use: Water is used to irrigate almost entirely native grass hay and pasture.¹

Return Flows: Willow Creek near Robertson, Wyoming.

Other Operational Information:

Sources: 1) John Yarbrough, State Engineer's Office, Interview, May 4, 2000.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

White, Mansfield, and Robbins Ditch, Black's Fork River, Diversion Data

| Wateryear | May | | June | | July | | August | | September | |
|-----------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|
| | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) | Average (cfs) | Monthly Total (AF) |
| 1980 | | | | | | | | | | |
| 1981 | | | | | | | | | | |
| 1982 | | | | | | | | | | |
| 1983 | | | | | | | | | | |
| 1984 | | | | | | | | | | |
| 1985 | 1.20 | 73.79 | 7.08 | 421.29 | 8.15 | 501.12 | 2.64 | 162.33 | 1.69 | 100.56 |
| 1986 | | | 19.31 | 1,149.02 | 9.87 | 606.88 | 0.30 | 18.45 | 0.00 | 0.00 |
| 1987 | 5.84 | 359.09 | 8.00 | 476.03 | 5.82 | 357.86 | | | | |
| 1988 | | | | | | | | | | |
| 1989 | | | | | | | | | | |
| 1990 | 8.41 | 517.11 | 11.93 | 709.88 | 4.02 | 247.18 | | | | |
| 1991 | | | | | 4.91 | 301.90 | 1.65 | 101.45 | 2.02 | 120.20 |
| 1992 | | | | | | | | | | |
| 1993 | 4.40 | 270.55 | 12.13 | 721.79 | 7.23 | 444.56 | 0.70 | 43.04 | 0.35 | 20.83 |
| 1994 | 3.04 | 186.92 | 5.79 | 344.53 | 0.83 | 51.03 | 0.05 | 3.07 | 0.23 | 13.69 |
| 1995 | 2.20 | 135.27 | 6.51 | 387.37 | 10.02 | 616.11 | 0.76 | 46.73 | 4.21 | 250.51 |
| 1996 | 8.08 | 496.82 | 12.72 | 756.89 | 5.25 | 322.81 | 1.79 | 110.06 | 4.21 | 250.51 |
| 1997 | | | | | 4.80 | 295.14 | 3.31 | 203.52 | 0.30 | 17.85 |
| 1998 | | | 6.13 | 364.76 | 11.62 | 714.49 | 1.72 | 105.76 | 0.11 | 6.55 |

| | | | | | | | | | | |
|-----------|------|--------|------|--------|------|--------|------|-------|------|-------|
| Averages: | 4.74 | 291.36 | 9.96 | 592.40 | 6.59 | 405.37 | 1.44 | 88.27 | 1.46 | 86.74 |
|-----------|------|--------|------|--------|------|--------|------|-------|------|-------|

Blank cells are due to missing/insufficient data.

Average = Average Flow for ENTIRE month. Monthly Total = Total Volume used during month.

See Methodology section for explanations.

Spot data readings used in calculating averages in table on following pages.

Green River Basin, Wyoming; Key Structures and Diversions
Description and Operation Memorandum

White, Mansfield, and Robbins Ditch, Black's Fork River, Diversion Data

Data:

1985 (all est): 5/9, off; 5/25, 1 cfs; 6/4, 10 cfs; 6/21, 5 cfs; 6/24, 4 cfs; 7/1, 9 cfs; 7/9, 9 cfs; 7/16, 9 cfs; 7/25, 7 cfs; 7/29, 7 cfs; 8/6, 1 cfs; 8/12, 1 cfs; 8/28, 5 cfs; 9/3, off; 9/10, 3 cfs; 9/17, 4 cfs; 9/24, off.

1986 (all est): 5/20, 30 cfs; 7/7, 11 cfs; 7/15, 11 cfs; 7/22, 11 cfs; 7/29, 5 cfs; 8/5, off; 8/5, 0.5 cfs; 8/19, 8/26, 9/2, 9/9, 9/16, 9/23, 9/30, off.

1987 (all est): 5/9, 5.0 cfs; 5/11, 8.0 cfs; 6/20, 8.0 cfs; 6/23, 8.0 cfs; 6/29, 8.0 cfs; 7/6, 8.0 cfs; 7/13, 9.0 cfs; 7/21, 3.0 cfs; 7/28, 3.0 cfs; 8/4, 3.0 cfs; 8/11, off.

1990: 5/12, 4.5 cfs; 5/14, 5.1 cfs; 5/24, 13.0 cfs; 5/26, 5.2 cfs; 6/6, 14.8 cfs; 6/12, 16.0 cfs; 6/19, 13.0 cfs; 6/22, 13.0 cfs; 6/26, 5.2 cfs; 7/10, 8.2 cfs; 7/17, 5.2 cfs; 7/24, off; 9/25, 14.0 cfs; 10/1, 1.0 cfs (est).

1991: 6/25, 7.0 cfs; 6/27, 7.0 cfs; 7/2, 7.0 cfs; 7/9, 7.0 cfs; 7/16, 5.0 cfs; 7/23, 5.2 cfs; 7/30, 0 cfs; 8/6, 1.5 cfs; 8/13, 0 cfs; 9/4, 5.0 cfs; 9/17, 0 cfs; 10/1, 2.0 cfs.

1992: 5/4, 8.40 cfs; 5/6, 3.70 cfs; 5/8, 5.14 cfs; 5/14, 5.14 cfs; 5/15, 5.14 cfs; 5/19, 5.40 cfs; 5/21, 14.80 cfs; 5/24, 5.20 cfs; 5/26, 5.20 cfs; 6/2, 5.19 cfs; 6/9, 5.19 cfs; 6/16, 8.19 cfs; 6/23, 8.20 cfs; 6/30, 8.20 cfs; 7/7, 6.70 cfs; 7/11, 6.7 cfs; 7/14, 5.20 cfs; 7/28, 3.00 cfs (est); 8/11, 0.50 cfs (est); 9/22, 0.33 cfs.

1993: 5/17, 2.00 cfs; 5/21, 6.30 cfs; 5/29, 14.00 cfs; 6/8, 6.20 cfs; 6/16, 15.00 cfs; 6/26, 15.00 cfs; 7/2, 11.00 cfs; 7/5, 14.50 cfs; 7/8, 9.20 cfs; 7/13, 9.20 cfs; 7/20, 8.31 cfs; 7/21, 2.39 cfs; 7/27, 2.40 cfs; 8/3, 2.40 cfs; 8/10, 0.00 cfs; 8/17, 0.50 cfs; 8/24, 0.50 cfs; 9/14, 0.00 cfs; 10/1, 1.00 cfs (est).

1994: 5/14, 5.0 cfs (arrive), 1.0 cfs (depart); 6/16, 7.6 cfs; 5/17, 5.6 cfs; 5/24, 4.4 cfs; 6/1, 6.6 cfs; 6/3, 5.2 cfs; 6/7, 5.2 cfs; 6/10, 5.2 cfs; 6/14, 5.2 cfs; 6/17, 5.2 cfs; 6/21, 7.2 cfs; 6/28, 7.2 cfs; 7/1, 2.0 cfs; 7/5, 3.6 cfs; 7/13, 8/13, 0.0 cfs; 8/16, 0.3 cfs; 8/23, 8/30, 9/6, 0.0 cfs; 9/20, 0.5 cfs; 9/27, 0.5 cfs.

1995: 5/15, 0.5 cfs; 5/17, 5.2 cfs; 5/19, 5.2 cfs; 5/22, 5.2 cfs; 5/30, 2.5 cfs; 6/6, 5.4 cfs; 6/13, 8.7 cfs; 6/24, 17.0 cfs; 6/30, 18.0 cfs; 7/7, 17.5 cfs; 7/15, 13.6 cfs; 7/26, 0.5 cfs; 8/1, 0.25 cfs; 8/8, 0.5 cfs (est); 8/15, 0.5 cfs (est); 8/18, 0.5 cfs (est); 8/22, 1.5 cfs (est); 8/29, 0.5 cfs (est); 9/5, 6.0 cfs; 9/12, 6.0 cfs; 10/3, 0.5 cfs.

1996: 5/10, 2.0 cfs (est); 5/13, 12.0 cfs (est); 7/2, 12.4 cfs (arrive), 9.2 cfs (depart); 7/12, 5.25 cfs; 7/16, 5.2 cfs; 7/23, 5.19 cfs; 7/30, 0.5 cfs; 8/6, 8/13, 0 cfs; 9/3, 2 cfs (arrive), 2.7 cfs (depart); 9/7, 1.0 cfs (est) (arrive), 0 cfs (depart); 9/24, 0 cfs.

1997: 7/1, 6.0 cfs (arrive), 5.2 cfs (depart); 7/15, 4.5 cfs (arrive), 5.2 cfs (depart); 7/22, 4.5 cfs (arrive), 5.2 cfs (depart); 7/29, 4.5 cfs (arrive), 4.0 cfs (depart); 8/5, 3.8 cfs (arrive), 5.2 cfs (depart); 8/12, 4.5 cfs (arrive), 5.0 cfs (depart); 8/19, 4.5 cfs (arrive), 0.0 cfs (depart); 8/26, 2.0 cfs (arrive), 3.6 cfs (depart); 9/2, 9/9, 0.0 cfs; 9/16, 0.5 cfs; 9/23, 0.5 cfs; 9/30, 0.5 cfs (est).

1998: 6/8, 5.7 cfs; 7/7, 11.5 cfs; 7/21, 16 cfs (arrive), 10.2 cfs (depart); 7/28, 8.3 cfs (arrive), 10 cfs (depart); 8/4, 8 cfs; 8/11, 8/18, 8/25, 9/1, 0 cfs; 9/8, 0 cfs (arrive), 0.9 cfs (est) (depart); 9/15, 9/22, 9/29, 10/6, 0 cfs.

Supply: 1980, average; 1981, slightly below average; 1982, average; 1983, above average; 1984, above average; 1985, average; 1986, average; 1987, average; 1988, below average; 1989, below average; 1990, below average; 1991, slightly below average; 1992, below average; 1993, average; 1994, below average; 1995, slightly above average; 1996, average; 1997, average; 1998, slightly above average.

Source: State Engineer's Office, Annual Hydrographers' Reports.